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ST. LOUIS SMELTING AND REFINING
MADISON COUNTY
COLLINSVILLE, ILLINOIS
ILD980607006
LPC# 1194280014
SUPERFUND/ HRS

CERCLA
REASSESSMENT

Illinois Environmental
Protection Agency

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FIGURES and TABLES

APPENDICES

1.0 SITE BACKGROUND

The Illinois Environmental Protection Agency's (Illinois EPA) Office of Site Evaluation Program was tasked by United States Environmental Protection Agency (U.S. EPA) Region V to conduct a CERCLA Reassessment at the St. Louis Smelting and Refining Site (formerly known as "Lead Smelter") in Collinsville, Illinois. The CERCLA Reassessment is performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as Superfund.

The St. Louis Smelting and Refining Site was placed on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) in June of 1981as a result of "Notification of Hazardous Waste Site" (103c) forms filed by National Lead Industries (N.L. Industries) in that same year. As described in more detail in the following sections, the site was ultimately archived on CERCLIS in 1989 on the basis of the results of the Preliminary Assessment (PA) and Site Inspection (SI) conducted by Illinois EPA.

The purpose of the CERCLA Reassessment is to determine whether or not current conditions and the introduction of new information at an archived site warrant further evaluation under the CERCLA process. The Illinois EPA's Office of Site Evaluation conducted a CERCLA Reassessment at St. Louis Smelting and Refining to further evaluate the site. The field activity portion of the Reassessment was conducted in spring of 2002 with a site visit on February 28,

and sediment and soils evaluation by X-ray Fluorescence (XRF) analysis on March 6 – 8, 2002.

Illinois EPA performed the investigation to obtain information to determine if the site poses a threat to human health and/or the environment and if so, to what extent. The investigation was also designed to determine if concentrations in residential soils exceed Removal Action Levels. This report represents the results of Illinois EPA's evaluation and briefly summarizes site conditions and includes recommendation as to how the site should be addressed in the future.

1.1 Site Description

The St. Louis Smelting and Refining Company Site is the former location of a primary lead smelting and lead refining operation positioned in the northeast corner of Collinsville, Illinois. The city of Collinsville is located in Madison County, Illinois. The site is located in the southwestern quarter of Section 23, Township 3 North, Range 8 West of the Third Principal Meridian. A plat map of Madison County from 1917 indicated that at one time, St. Louis Smelting and Refining Company owned up to 482 acres. However, Sanborn Fire Insurance maps from 1915 and 1926 indicate that the facility's primary activities occurred on approximately 40 acres. Analysis of historical aerial photographs, historical sampling activities, and the results of this reassessment have identified an area of concern totaling approximately 148 acres and for the purposes of this reassessment is referred to as "the site". Figure 1 provides general information regarding the site's location. Figure 2 shows the 1926 Sanborn map overlaid on

1998 aerial photography. Pine Lake is identifiable in the northwest portion of Figure 2 and Pine Lake Road is the primary east-west road in the photo.

The site is located east of Route 159 with Pine Lake Road as one of its central features. The site extends to the west to include Pine Lake and to the east to include the unnamed pond at the end of Pine Lake Road. Roads most nearly bordering the site on the north and south are Peachtree Trail and California Avenue, respectively. Property use within site boundaries is single family residential. Residential property lot sizes are less than one acre with few exceptions. Homes in the area range from approximately 90 years old to less than 5 years in age. Homes in the area receive potable water through a public water supply system. Topography within the central portion of the site is relatively flat changing to rolling hills on the northern, southern and eastern portions of the site.

Two surface water bodies exist on site, Pine Lake and the unnamed pond on the eastern end of Pine Lake Road. Surface water runoff from residential properties adjacent to Pine Lake is channeled into the lake. The south shore of Pine Lake is dammed and bounded by Pine Lake Road. The dam has a culvert that allows water in Pine Lake to drain under the road during high-water periods. After flowing under Pine Lake Road, drainage from Pine Lake during wet periods flows south-southwest into the lakes in Woodland Park.

Residents of the Pine Lake Subdivision surrounding Pine Lake own the water body and small portions of adjacent property. Pine Lake is used for recreational fishing throughout the year and swimming during warmer months. Residents have brought in sand for a small beach area on a central finger of land protruding southward into the lake and a permanent swimming dock exists in the south-central portion of the lake.

Local residents also use the unnamed pond on the eastern end of Pine Lake road for recreational purposes. Small boats and fishing equipment are located around the pond. The pond is fed by surface water runoff in all directions. A gently sloping drainage way feeds the pond from the west-southwest during wet periods but the drainage way appears to remain dry most of the time. Construction debris and some slag line the drainage way. The drainage way is bounded immediately on each side by established trees that in most cases, fade into residential yards. During high-water periods water from the unnamed pond drains to the east through a small drainage way into partially wooded private lands. With the exception of the portion of the drainage way nearest the pond, the drainage way appears to be dry during much of the year. The drainage way from the pond ultimately leads toward the south into partially wooded private lands. Canteen Creek flows southward approximately 500 feet to the east of the unnamed pond but surface water runoff from the site and areas around the pond do not appear to drain into the creek. Canteen Creek is the nearest perennial stream to the site.

1.2 Site History

The St. Louis Smelting and Refining Company operated a lead smelting facility in Madison County, Illinois from 1904 until November of 1933. At peak production, the facility employed 425 men. At the time of operation, the facility was located northeast of Collinsville, Illinois. Since that time, Collinsville has expanded to the area surrounding the facility and as indicated by historical aerial photographs, in the 1950's and 1960's residential homes began to expand onto the property (and into some of the buildings) formerly used by the lead smelter.

The St. Louis Smelting and Refining Company was a subsidiary of N.L. Industries. Historical information regarding the St. Louis Smelting and Refining Company indicates that environmental concerns surrounding the facility were an issue as early as 1915. In 1915, a local landowner sold rights to the company to "deposit smoke fumes, vapor, gases, acids, and like-substances" on his property (Madison County). In addition, a bicentennial document compiled for Collinsville stated that "owners of acreage in the area [around the facility] filed damage suits against the company alleging destruction of plant life by lead-laden smoke from the plant" (Collinsville). As a result, in 1917 "the company constructed a 386 foot-tall stack at a cost of $75,000" (Stehman).

The plant closed on November 21, 1933 following a strike for higher wages and shorter hours (Stehman). Following plant closure, equipment from the facility was shipped to South America (Stehman). The actual date when the facility was dismantled is unknown. However, an aerial photograph from 1941 indicates

that by the date of the photo, only two buildings from the facility were still intact and the plant was reduced to primarily foundations and rubble. The 1941 aerial photograph shows lack of vegetation throughout the plant area and a large slag pile on the southeast portion of the former property. The slag pile was located where the unnamed pond at the end of Pine Lake Road is now located. The slag pile was no longer visible in a 1955 aerial photograph of the area.

Research regarding the ownership history of the property was conducted at the Madison County Recorder of Deeds Office. The earliest recorded transaction identified for the property was the sale of a portion of Section 23 to the St. Louis Smelting and Refining Company by L.R. and Sarah Collins in 1903. In 1913, the company purchased mineral rights from an adjacent landowner. No other transactions were identified during the years of operation. A plat map of Madison County from 1917 indicated that at one time, St. Louis Smelting and Refining Company owned up to 482 acres. Historical Plat books along with fire insurance maps and aerial photographs indicate that the primary smelting and refining activities occurred on approximately 40 acres. In the years following the plant's closure, from 1937 to 1939, portions of the property were sold to Madison County and nine other families. Historical plat books indicate that from approximately 1966 to 1969 the Eagle Picher Company owned 50 acres in the area, including the 40 acres where St. Louis Smelting and Refining Company conducted its primary operations. Various reports from local residents indicate that based on large amounts of truck traffic, portions of the slag pile present in

the 1941 aerial photograph may have been moved off-site prior to or during residential development of the area.

Residential development in the area directly north and south of Pine Lake began in the 1950's as evidenced by historical aerial photographs. Residential development to the east of Pine Lake in what is now called Collinwoods subdivision began in the mid-to-late 1970's. Residential development in the area progressed in phases and building currently continues on the last empty lots. With the exception of the last 1 – 2 empty lots, the newest homes in the area are concentrated around Hickory Point Road and some are less than 10 years in age.

Investigations were conducted on residential properties and surrounding areas in mid-to-late 1980's and early 1990's. Results from an SI conducted at the site (including a low preliminary site score) in 1987 resulted in the site being archived in CERCLIS. Changes in CERCLA and resulting modification to the site scoring process prompted a reassessment in 2002.

1.3 Previous Investigations

Illinois EPA conducted a PA at the site in May of 1985. The PA, which was finalized on June 11, 1986, assigned a high priority to the site for further inspection and identified the presence of lead ore and lead dross (a byproduct from the smelting process) as potential hazards at the site.

On July 16, 1985 representatives from Illinois EPA and Illinois Department of Public Health (IDPH) visited the site and obtained a slag sample and 9 soil samples from two residential yards in the Collinwoods Subdivision. An October 2, 1985 memorandum from an IDPH representative summarized the visit's findings. Laboratory analysis of the lead slag showed 13,000 mg/kg, or parts per million (ppm) lead. Lead concentrations in the soils collected from the two properties ranged from 12 mg/kg to 2,600 mg/kg. Additional information about each sample is provided in Table 1, attached.

On October 15, 1985 representatives from Illinois EPA obtained one slag and one soil sample from the area of highest concentration as indicated by previous sampling events. The samples were analyzed for distilled water leachability and EP Toxicity. The leachability test on the slag and soil resulted in 760 ppm and 53 ppm, respectively. The EP Toxicity test on the slag and soil resulted in 1.7 ppm and 40 ppm, respectively. (Mensing)

On October 17, 1985 representatives from IDPH obtained additional soil samples from the site. Representatives from IDPH obtained 51 soil samples from 26 residential properties. Concentrations of lead in the soil samples obtained by IDPH ranged from 31 mg/kg to 7944 mg/kg. Results are included in Table 1.

The IDPH also conducted a voluntary blood-lead screening analysis for neighborhood children in October of 1985. Results of the blood lead screening for local children were below levels of concern.

On March 27, 1986 representatives from Illinois EPA collected two soil samples described as "brown soil with pieces of metallic slag" from two locations that at the time of this writing, are unknown. Results of the analyses were 6400 mg/kg and 14000 mg/kg for total lead. (Illinois EPA)

On September 9, 1986 Illinois EPA personnel obtained additional samples from the site. The sampling activities focused on the unnamed pond at the eastern end of Pine Lake Road, and surrounding areas. Samples of surface water and sediment were obtained from the pond. Soil samples from three locations on the dike east of the pond were also composited. In addition, surface water from a seep through the dike on the east side of the pond was also obtained. Lastly, slag and a slag/soil mixture was obtained from a residential property west of the pond. (Johnson)

The table below summarizes the results from the September 1986 sampling conducted by Illinois EPA.

September 1986 Sample Summary	
Sample Location	Total Lead Concentration in PPM
Pond Water	0.005
Pond Sediment	BDL – 338
Slag	13200 – 14800
Residential Soil and Slag	2700
Dike Soil Composite	981
Dike Seep	BDL

BDL – Below Detection Limit

Illinois EPA performed an SI at the site on July 22, 1987. No samples were obtained as part of the formal SI because the site had been sampled previously and the results along with the presence of lead slag on the site were adequate to substantiate the presence of hazardous substances at the site. The SI was completed on December 1, 1989. (The site was archived on the CERCLIS list as a result of recommendations in the SI Report.)

On August 7, 1987 Illinois EPA responded to a request from a resident to sample her yard because children play in her yard and black pebbles were present in her yard and vegetation had not yet become established. A site visit indicated that the pebbles could only be found occasionally and that they were probably bits of shale. Analysis of the three-aliquot composite sample resulted in levels of lead below detection limits.

On May 30 and 31, 1991 representatives from Illinois EPA and IDPH obtained twenty-five samples from nine yards in Collinwoods subdivision. A description of the sampling event along with lab results were provided in an Illinois EPA February 16, 1992 field office memorandum to the Division File. Each sample

was analyzed for total lead and Toxicity Characteristic Leaching Procedure (TCLP) lead. Prior to analysis, samples were sieved to eliminate particles that would not pass through a #200 sieve (0.074 mm). This procedure was performed to remove large indigestible pieces of lead slag in an attempt to determine the amount of respirable lead in the soil. Total lead concentrations in soils ranged from 8.8 mg/kg to 4700 mg/kg. Results for TCLP lead analysis ranged from 0.003 mg/L to 20 mg/L. Results are included in Table 1.

In November of 2001, a homeowner from the Pine Lake subdivision obtained three sediment samples from Pine Lake. The samples were obtained because at the time, the Pine Lake Homeowners Association were considering dredging the lake because it had silted in and the three northern fingers of the Lake had become more shallow than desired. A single sediment sample was taken from each of the three fingers of the lake. The homeowner identified the samples as Area 1, Area 2, and Area 3 with Area 1 representing the northwest finger of the lake, Area 2 representing the north-central finger, and Area 3 representing the northeast finger of the lake. The three sediment samples were analyzed at Teklab in Collinsville for total metals and Resource Conservation and Recovery Act (RCRA) TCLP metals. In addition, the Area 1 sample was analyzed for semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and polychlorinated biphenols (PCBs) (Miller, 12/03/01; Austin).

The analysis results from Pine Lake sediments collected by the homeowner in 2001 are summarized in the table below.

Sample Location	Total Lead mg/kg	TCLP Lead mg/L	Total Arsenic mg/kg
Area 1	2310	26.9	17.5
Area 2	2680	31.9	6.89
Area 3	6220	12.7	7.35

The sample results indicate that TCLP lead concentrations in the sediment are above the regulatory standard of 5.0 mg/L meaning that if the sediments were disposed of off-site, at least a portion of the material would be regulated as RCRA hazardous waste for lead.

Organic analysis results for both VOCs and SVOCs on the Area 1 sample resulted in levels below detection for all compounds analyzed. The lab noted that the temperature of the sample was out of the acceptable range.

2.0 CERCLA REASSESSMENT ACTIVITIES

2.1 Field-based Site Characterization Studies

On March 6 – 8, 2002 representatives of Illinois EPA conducted field-based site characterization using a Niton X-Ray Fluorescence (XRF) multi-element analyzer. Because lead levels were presumed to still exist at locations investigated during prior activities, the sampling plan was designed to investigate properties not previously sampled. Residential locations were identified and verbal property access was obtained in-person or by phone. In addition, based on Pine Lake's proximity to the smelting facility and historical records showing

that the lake's water may have been used for plant influent and effluent, sediment sampling was planned for Pine Lake.

2.1.1 Sediment Sampling and Analysis

Sediment sampling activities were conducted in Pine Lake, the lake in Woodland Park, and the drainage way between the two lakes. In addition, sediment samples were taken in the unnamed pond east of the western end of Pine Lake Road and the small pond due north of Pine Lake.

Sediment samples were obtained using stainless steel hand augers and placed in zip-lock bags using stainless steel trowels. All sampling equipment was decontaminated prior to and in between sampling locations using Alconox and distilled water. Following collection, sediment samples were dried using a microwave oven dedicated to sampling activities. Sediment samples were then analyzed using the XRF. In general, sediment samples were obtained from each location at 6, 12, 24, and 30 inches below the surface of the sediments. A total of 24 separate locations were investigated: 16 in Pine Lake, 3 the lake in Woodland Park, 2 in the drainage way in between Pine Lake and the lake in Woodland Park, 2 in the unnamed pond at the end of Pine Lake Road, and 1 in the pond due north of Pine Lake.

Lead concentrations in sediments from Pine Lake ranged from below detection limits to 86,374 ppm. Lead concentrations in sediments from the lake in Woodland Park ranged from 40.3 ppm to 357.4 ppm. Concentrations of lead in

sediments from the drainage way in between Pine Lake and the lake in Woodland Park ranged between below the limit of detection to 419.2 ppm. Lead concentrations in sediments from the unnamed pond at the end of Pine Lake Road ranged from 36.8 ppm to 2099.2 ppm. Concentrations of lead in sediments from the pond just north of Pine Lake ranged between 35.5 ppm to 82 ppm. Table 2 shows concentrations of metals for which Ontario Sediment Benchmarks are available (plus chromium) for all sediment samples. Figure 3 displays the location and corresponding lead concentrations for sediment samples obtained from Pine Lake. Figure 4 includes lead concentrations observed at depths of approximately 6 inches in the sediments of Pine Lake, the lake in Woodland Park, and the unnamed ponds just north of Pine Lake, and at the eastern end of Pine Lake Road.

2.1.2 Residential Soil Sampling and Analysis

Residential soil sampling activities were conducted on March 7 and 8, 2002 at homes in the area surrounding the former location of the smelting facility. Soil samples were obtained with a clean stainless steel trowel and XRF analysis was performed at the sampling location immediately following collection. Soil analysis via XRF was conducted at the soil surface at each sampling location. In general, soil samples below the ground surface were taken at each location at approximately 6-inch intervals up to a depth of 2 feet. The final depth of soil sampling and analysis at each location varied depending on soil characteristics and XRF results. In general, if soil appeared to be un-impacted (no bits of slag

or other discoloration) with no indication of fill material and lead concentrations per XRF were below 400 ppm, the investigation of the subject location was discontinued.

The XRF was used to obtain 198 readings from 51 different sampling locations on a total of 31 properties. Concentrations of lead ranged from below detection to over 90,000 ppm. Thirteen of the 31 properties tested had lead concentrations greater than 1000 ppm. Table 3 contains XRF results for lead and additional metals detected during the March 2002 investigation. Detected concentrations are compared to Illinois EPA's Residential Corrective Action Objectives as established within the Tiered Approach to Corrective Action Objectives (TACO). Figure 5 provides residential XRF locations and associated lead concentrations. Figure 6 combines 2002 XRF residential data from 0 – 3 inches below ground surface along with historical residential soil sampling data discussed in Section 1.3.

2.1.3 Laboratory Analysis

As a result of elevated levels observed during the XRF residential soil analysis, arrangements were made to have several soil samples analyzed under the U.S. EPA's Contract Laboratory Program. Six soil samples were packaged and sealed in accordance with Illinois EPA's Office of Site Evaluation procedures. Soil samples were sent Sentinel Incorporated in Huntsville, Alabama. The samples were analyzed for inorganic analytes identified within the Target Compound List (TCL). A complete list of the TCL inorganic analytes can be

found in Appendix A. for total metals analysis. Lead concentrations in the soil samples ranged from 389 mg/kg to 36,700 mg/kg. A background sample was not obtained. The laboratory results are included as Table 4 of this report. The complete analytical data package, including quality assurance review sheets is located in Appendix B. Photographs taken of each soil sampling location are provided in Appendix C.

The soil samples sent for laboratory analysis were intended to generate high quality data for further use in upcoming CERCLA activities at the site and to confirm XRF results from corresponding locations. The table below provides information to correlate laboratory samples with XRF locations and depths.

Laboratory Sample Number	Corresponding XRF Sample Number	Corresponding XRF Reading Number	Laboratory Sample Depth (inches below ground surface)
X101	R9	242	4
X102	R24	279	0 (surface sample)
X103 (dup of X102)	R24	279	0 (surface sample)
X104	R38	335	0 – 1
X105	R53	367	1 - 2
X106	R64	405	3

3.0 REFERENCES

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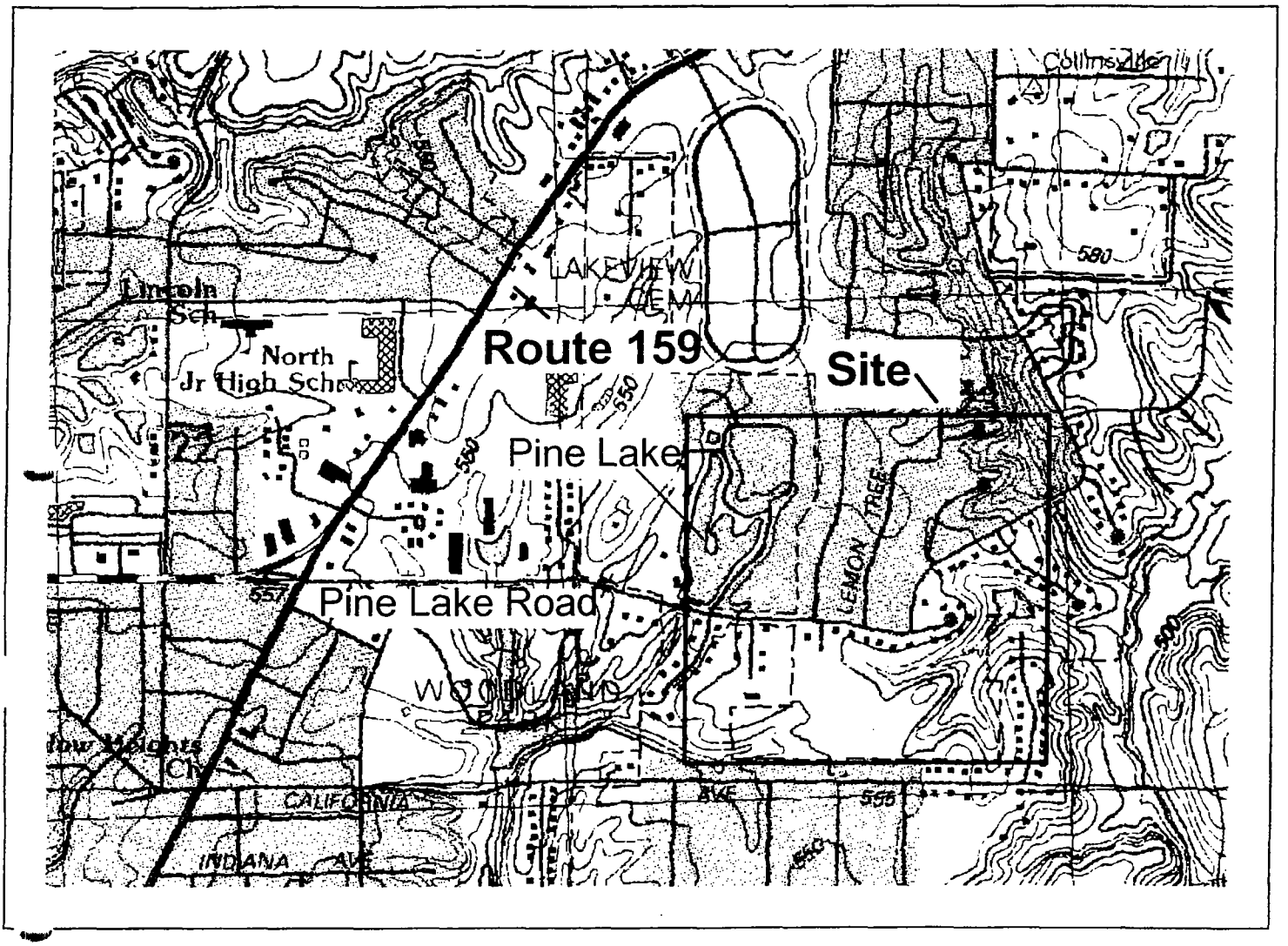
Figures

Figure 1
Site Location Map
St. Louis Smelting and Refining Company Site
Collinsville, Illinois



1000 0 1000 2000 Meters

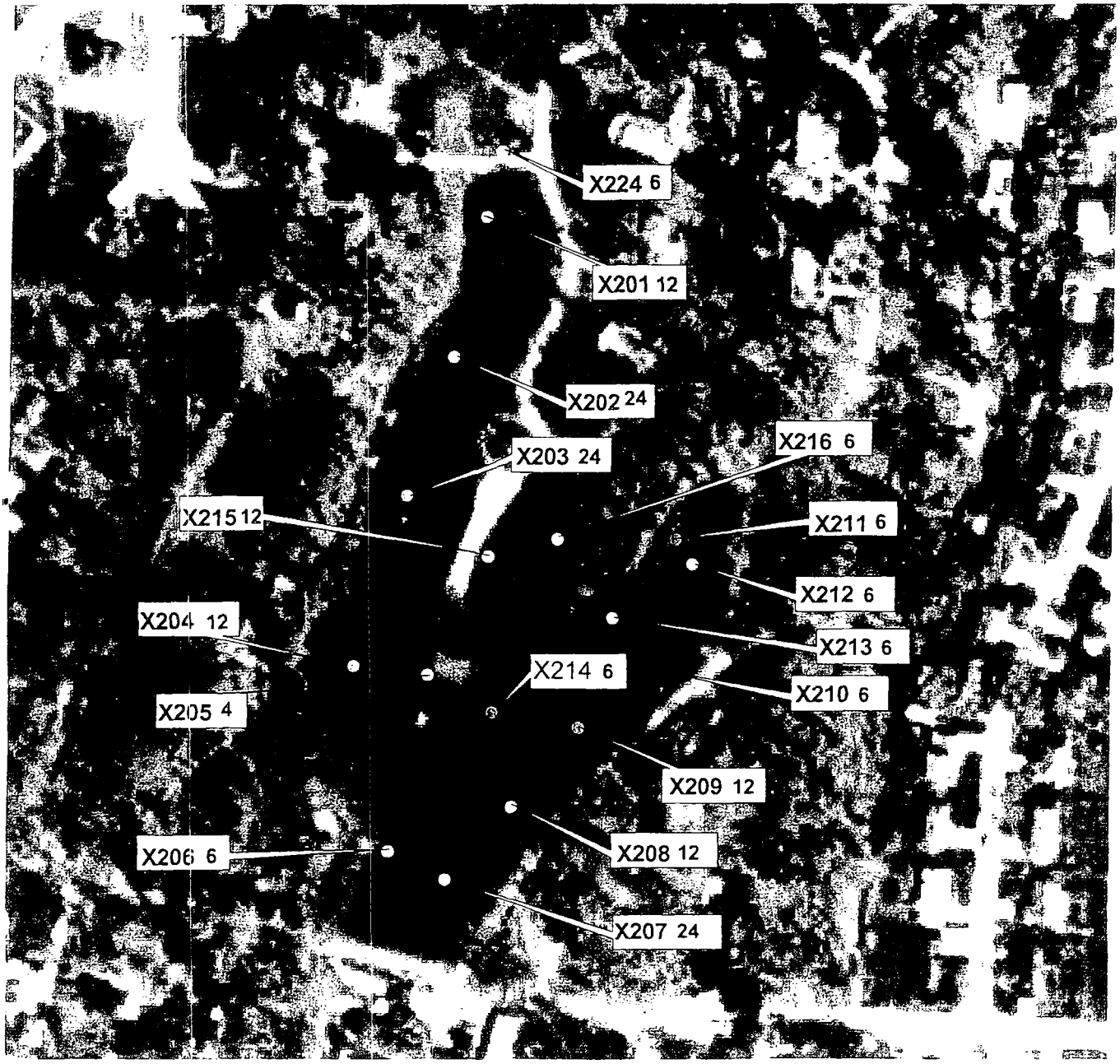
N

Figure 2

St. Louis Smelting & Refining

May 1926 Sanborn Fire Insurance Map Overlaid on 1999 Aerial Photograph

Pine Lake
Lead Concentrations in Sediment in Parts per million



Legend

Lead Concentrations in Sediment in ppm

- 18.7 - 1868.8
- 1868.8 - 4960
- 4960 - 12998.4
- 12998.4 - 47283.2
- 47283.2 - 86374.4

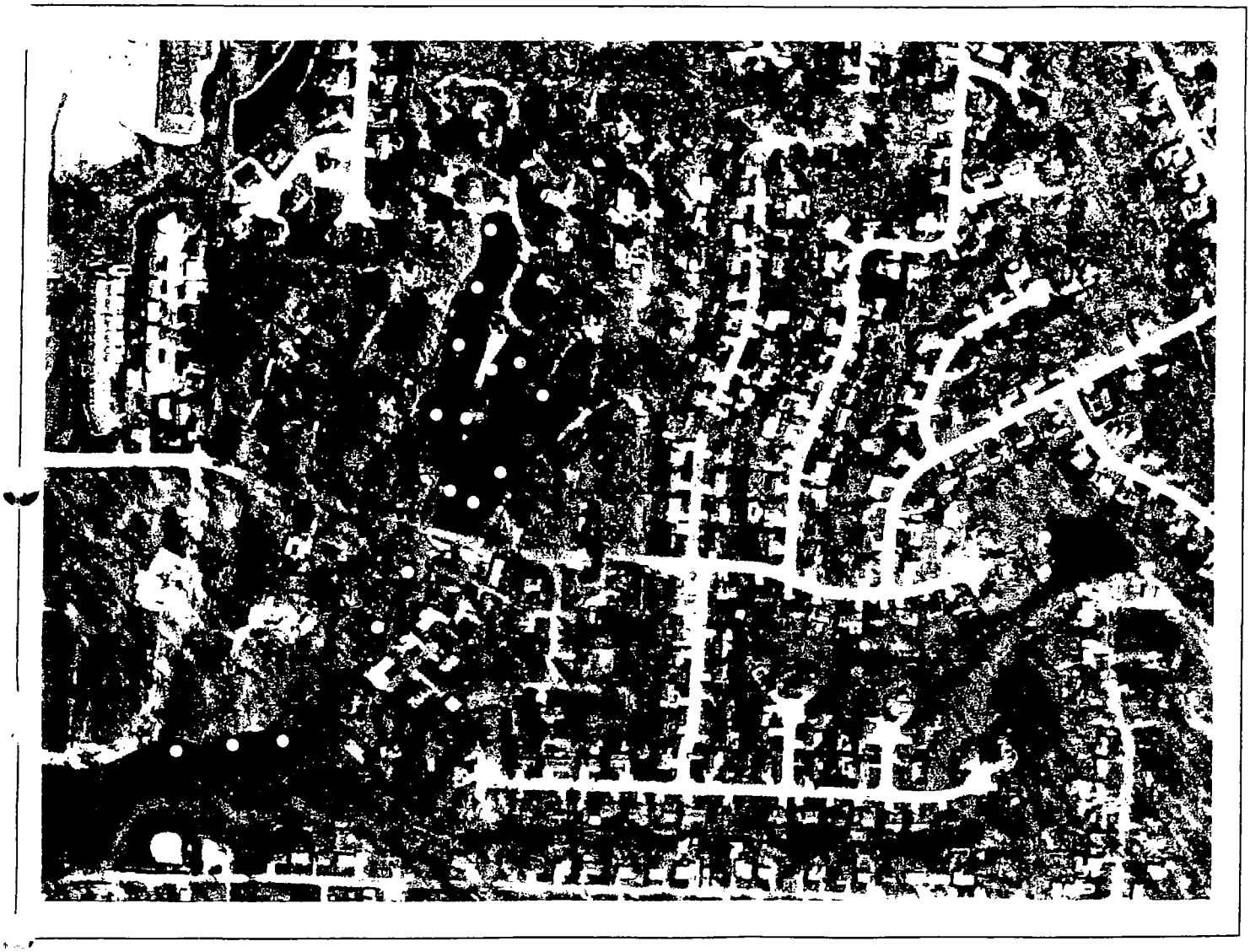
Location I.D. , Sample Depth

N

40 0 40 80 Meters

Figure 3

Figure 4
Sediment XRF Sampling Locations
Concentrations in PPM from Sediment depth of 6 Inches



100 0 100 200 Meters

Legend

Lead Concentrations in PPM

- 30 - 1000
- 1001 - 3000
- 3001 - 5000
- 5001 - 10000
- 10001 - 86374.4

N
W E
S

Figure 5
Residential XRF Soil Sampling Locations
Depth: Surface - 3 inches Below Ground Surface
Concentrations in PPM

100 0 100 200 Meters

Legend

Concentrations in ppm

- 0 - 400
- 401 - 2000
- 2001 - 4000
- 4001 - 8000
- 8001 - 28800

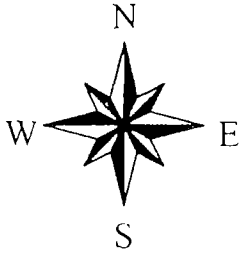


Figure 6

Historical Soil Sample Locations 1985 - 2001 and March 2002 X-ray Fluorescence Locations

Depths: Surface - 3 inches below ground surface

Legend

Concentrations in mg/kg

- 0 - 400
- 401 - 1000
- 1001 - 2000
- 2001 - 4000
- 4001 - 28800

0.08 0 0.08 0.16 Miles

N

Tables

TABLE 1

Historical Soil Sampling Results for Lead

SAMPLE ID	TIME	LOCATION	ADDRESS	SLAG	DESCRIPTION	DATE	Lead Conc. (wet wt.) in mg/kg	Lead Conc. (dry wt.) in mg/kg	Lead TCLP in mg/L	SAMPLER
X101	10:50	Backyard	1018 Pine Lake Road	y	Visible slag in bare areas.	5/29/91	1700	1700	20.000	IEPA/IDPH
X102	11:00	Backyard	1018 Pine Lake Road	n	Mostly grass covered. Taken from bare spots.	5/29/91	720	730	1.500	IEPA/IDPH
X103	11:10	Front	1018 Pine Lake Road	y	Grassy. Rock not all appears to be slag.	5/29/91	1100	1200	3.800	IEPA/IDPH
X104	11:58	Backyard	1967 Banyan Tree	n	Trace cinders	5/29/91	3400	3400	7.900	IEPA/IDPH
X105	12:15	Playarea	1967 Banyan Tree	n	Under swing set.	5/29/91	560	570	0.640	IEPA/IDPH
X106	12:25	Front	1967 Banyan Tree	n	Composite of surface	5/29/91	99	100	0.120	IEPA/IDPH
X107	12:40	Garden	1970 Banyan Tree	y	Lg. chunks of slag. Coal noted	5/29/91	140	140	0.007	IEPA/IDPH
X108	12:53	Back	1970 Banyan Tree	y	Slag exposed on surface, partially covered	5/29/91	3000	3000	26.000	IEPA/IDPH
X109	12:58	Back-DupX108	1970 Banyan Tree	y	Duplicate of X108	5/29/91	3100	3100	38.000	IEPA/IDPH
X110	13:15	Front	1970 Banyan Tree	n	Mostly grass covered, few bare areas	5/29/91	520	530	0.002	IEPA/IDPH
X111	14:40	Playarea	1979 Banyan Tree	n	Grass covered, near swing set. No slag noted.	5/29/91	11	11	0.060	IEPA/IDPH
X112	14:50	Back	1979 Banyan Tree	n	Under tree. Grassy, a few bare areas. No slag noted.	5/29/91	20	20	0.006	IEPA/IDPH
X113	15:00	Front	1979 Banyan Tree	n	Front, by road. Taken from a few bare areas	5/29/91	41	41	0.005	IEPA/IDPH
X114	15:15	Back	1980 Lemon Tree	n	Grass cover, a few bare spots.	5/29/91	41	41	0.003	IEPA/IDPH
X115	15:25	Back	1980 Lemon Tree	n	Next to house. Small bare area mostly grass.	5/29/91	59	60	0.007	IEPA/IDPH
X116	15:40	Front	1980 Lemon Tree	y	Front yard. Trace slag by street.	5/29/91	180	180	0.002	IEPA/IDPH
X117	08:15	Playarea	1981 Lemon Tree	n	Bare area under tree canopy. Bricks in concrete.	5/30/91	1000	1000	3.000	IEPA/IDPH
X118	08:30	Playarea	1981 Lemon Tree	n	Taken under a swing. Brick pieces, no slag noted.	5/30/91	1500	1500	7.000	IEPA/IDPH
X119	08:50	Garden	2000 Lemon Tree	y	Garden. Coal, trace slag.	5/30/91	58	59	0.020	IEPA/IDPH
X120	08:53	Garden - Dup X11	2000 Lemon Tree	y	Duplicate of X119.	5/30/91	52	53	0.490	IEPA/IDPH
X121	09:10	Back	2000 Lemon Tree	y	Small slag pieces noted on surface	5/30/91	3000	3000	19.000	IEPA/IDPH
X122	12:10	Garden	916 Peachtree	n	No slag noted.	5/30/91	9	9	0.060	IEPA/IDPH
X123	09:40	Back	1903 Pinehurst	y	Fine to cobble slag. Taken from southwest corner of backyar	5/31/91	4700	4700	18.000	IEPA/IDPH
X124	09:55	Garden	1903 Pinehurst	y	Trace of slag in topsoil. Garden in backyouard.	5/31/91	140	140	0.047	IEPA/IDPH
X125	10:20	Front	1903 Pinehurst	n	Bare areas in front yard.	5/31/91	20	20	0.001	IEPA/IDPH
00615		Back	1010 Pine Lake Road	u	Backyard - Southwest corner	7/16/85	740	740	0.000	IDPH
00614		Back	1010 Pine Lake Road	u	Backyard - Southeast corner of house	7/16/85	1220	1220	0.000	IDPH
00616		Back	1010 Pine Lake Road	u	Backyard - Southwest corner of lot	7/16/85	12	12	0.000	IDPH
00617		Front	1010 Pine Lake Road	u	Frontyard - Northwest corner	7/16/85	110	110	0.000	IDPH

TABLE 1

Historical Soil Sampling Results for Lead

SAMPLE ID	TIME	LOCATION	ADDRESS	SLAG	DESCRIPTION	DATE	Lead Conc. (wet wt.) in mg/kg	Lead Conc. (dry wt.) in mg/kg	Lead TCLP in mg/L	SAMPLER
00618		Front	1012 Pine Lake Road	u	Frontyard - Northeast corner - vacant at time of sample	7/16/85	118	118	0.000	IDPH
00619		Back	1012 Pine Lake Road	u	Backyard - Southeast corner - vacant at time	7/16/85	2600	2600	0.000	IDPH
00620		Middle	1012 Pine Lake Road	u	Middle of lot prior to home being built	7/16/85	430	430	0.000	IDPH
00340		Back	1010 Pine Lake Road	u	Backyard in middle	7/16/85	1454	1454	0.000	IDPH
00341		Back	1012 Pine Lake Road	u	Backyard in middle	7/16/85	162	162	0.000	IDPH
01853		Back	2 Aspen Circle	u	Backyard in middle	10/17/85	119	119	0.000	IDPH
01852		Front	2 Aspen Circle	u	Frontyard in center	10/17/85	172	172	0.000	IDPH
01851		Back	1968 Raintree Trail	u	Backyard - Center of yard	10/17/85	7168	7168	0.000	IDPH
01850		Front	1968 Raintree Trail	u	Frontyard - Northeast	10/17/85	3083	3083	0.000	IDPH
01849		Front	1985 Lemon Tree	u	Frontyard - Center	10/17/85	959	959	0.000	IDPH
01848		Back	1985 Lemon Tree	u	Backyard - Center	10/17/85	75	75	0.000	IDPH
01847		Front	5 Aspen Circle	u	Frontyard - Center of yard	10/17/85	92	92	0.000	IDPH
01846		Back	5 Aspen Circle	u	Backyard - Center	10/17/85	112	112	0.000	IDPH
01845		Front	1994 Raintree	u	Frontyard - Center	10/17/85	77	77	0.000	IDPH
01844		Back	1994 Raintree	u	Backyard - Center of yard	10/17/85	92	92	0.000	IDPH
01843		Vacant	Raintree	u	Vacant lot along road	10/17/85	9130	9130	0.000	IDPH
01842		Vacant	Raintree	u	Vacant lot - Top of hill	10/17/85	2021	2021	0.000	IDPH
08141		Back	1993 Raintree	u	Backyard - Center	10/17/85	479	479	0.000	IDPH
01840		Front	1993 Raintree	u	Frontyard - Center	10/17/85	133	133	0.000	IDPH
01839		Back	1989 Raintree	u	Backyard - Center	10/17/85	1549	1549	0.000	IDPH
01838		Front	1989 Raintree	u	Frontyard - Center	10/17/85	762	762	0.000	IDPH
01837		Front	1981 Raintree	u	Frontyard - south corner - 1 ft. from curb	10/17/85	1769	1769	0.000	IDPH
01836		Back	1980 Raintree	u	Vacant lot backyard area - center	10/17/85	1571	1571	0.000	IDPH
01835		Front	1980 Raintree	u	Vacant lot frontyard area - center	10/17/85	2603	2603	0.000	IDPH
01834		Back	1975 Raintree	u	Backyard - Center of yard	10/17/85	1924	1924	0.000	IDPH
01833		Front	1975 Raintree	u	Frontyard - Center	10/17/85	4023	4023	0.000	IDPH
01710		Back	1019 Pine Lake Road	u	Backyard - Center	10/17/85	125	125	0.000	IDPH
01709		Front	1019 Pine Lake Road	u	Frontyard - Center	10/17/85	1969	1969	0.000	IDPH
01708		Back	1017 Pine Lake Road	u	Backyard - Center	10/17/85	1128	1128	0.000	IDPH
01707		Front	1017 Pine Lake Road	u	Frontyard - Center	10/17/85	31	31	0.000	IDPH
01706		Back	1008 Pine Lake Road	u	Backyard - Center	10/17/85	1736	1736	0.000	IDPH
01705		Front	1008 Pine Lake Road	u	Frontyard - Center	10/17/85	156	156	0.000	IDPH

TABLE 1

Historical Soil Sampling Results for Lead

SAMPLE ID	TIME	LOCATION	ADDRESS	SLAG	DESCRIPTION	DATE	Lead Conc. (wet wt.) in mg/kg	Lead Conc. (dry wt.) in mg/kg	Lead TCLP in mg/L	SAMPLER
01704		Back	1006 Pine Lake Road	u	backyard - edge of drainage ditch	10/17/85	7944	7944	0.000	IDPH
01703		Back	1006 Pine Lake Road	u	backyard - bottom of drainage ditch	10/17/85	4258	4258	0.000	IDPH
01702		Back	1973 Dogwood	u	Backyard	10/17/85	347	347	0.000	IDPH
01701		Front	1973 Dogwood	u	Frontyard	10/17/85	691	691	0.000	IDPH
01700		Front	1975 Dogwood	u	Frontyard - Fence Corner	10/17/85	2652	2652	0.000	IDPH
01699		Back	1975 Dogwood	u	Backyard - Center	10/17/85	1072	1072	0.000	IDPH
01698		Back	1980 Dogwood	u	Backyard - Center - Vacant Lot	10/17/85	1400	1400	0.000	IDPH
01697		Front	1980 Dogwood	u	Frontyard - Center - Vacant Lot	10/17/85	832	832	0.000	IDPH
01696		Back	1981 Dogwood	u	Backyard - Center - Vacant Lot	10/17/85	74	74	0.000	IDPH
01695		Front	1981 Dogwood	u	Frontyard - Center - Vacant Lot	10/17/85	85	85	0.000	IDPH
01694		Back	1969 Banyan Tree	u	Backyard - Center	10/17/85	3828	3828	0.000	IDPH
01693		Front	1969 Banyan Tree	u	Frontyard Center	10/17/85	1124	1124	0.000	IDPH
01692		Back	1967 Banyan Tree	u	Back - Bottom of slope	10/17/85	424	424	0.000	IDPH
01691		Front	1967 Banyan Tree	u	Frontyard Center	10/17/85	1769	1769	0.000	IDPH
01690		Back	1970 Banyan Tree	u	Back - Bottom of slope - house under construction	10/17/85	74	74	0.000	IDPH
01689		Front	1970 Banyan Tree	u	Frontyard Center - house under construction	10/17/85	366	366	0.000	IDPH
01688		Back	1966 Banyan Tree	u	Backyard - Center - Vacant Lot	10/17/85	175	175	0.000	IDPH
01687		Front	1966 Banyan Tree	u	Frontyard - Center - Vacant Lot	10/17/85	736	736	0.000	IDPH
01686		Back	1971 Banyan Tree	u	Backyard - Center - Vacant Lot	10/17/85	2284	2284	0.000	IDPH
01685		Front	1971 Banyan Tree	u	Frontyard - Center - Vacant Lot	10/17/85	2336	0	0.000	IDPH
01684		Back	1969 Banyan Tree	u	Backyard - Center - Vacant Lot	10/17/85	143	143	0.000	IDPH
01683		Front	1969 Banyan Tree	u	Frontyard - Center - Vacant Lot	10/17/85	1120	0	0.000	IDPH
01682		Back	1972 Banyan Tree	u	Backyard - Center of Sloped area	10/17/85	121	121	0.000	IDPH
01681		Front	1972 Banyan Tree	u	Frontyard - Center - Vacant Lot	10/17/85	204	204	0.000	IDPH
S8		Dike	Pine Hurst	y	Dike - soil, slag mix - small pine lake	9/9/86	981	981	0.000	IEPA
S7		Side	1010 Pine Lake Road	y	Soil - slag mix	9/9/86	2700	2700	0.000	

Table 2
Metal Concentrations in Sediment as Identified by X-Ray Fluorescence

Sample Number	Sample Depth in inches	Sample Location Notes	XRF Reading Number	Metal Concentrations in mg/kg as identified by X-Ray Fluorescence											
				Lead	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Cadmium	Silver
				Ontario Sediment Screening Benchmarks											
				31	6	0.2	120	16	16	50	20000	460		0.6	0.5
X201	6	Pine Lake	59, 60	438.4	<LOD	<LOD	205	482.8	<LOD	<LOD	6828.8	<LOD	<LOD	<LOD	<LOD
X201	12	Pine Lake	61, 62	2788.8	<LOD	<LOD	684.4	389.6	<LOD	<LOD	21299.2	1329.6	<LOD	65.2	<LOD
X201	24	Pine Lake	63,64	2379.2	<LOD	<LOD	358.6	<LOD	<LOD	<LOD	14988.8	<LOD	410.8	<LOD	<LOD
X201	30	Pine Lake	53,54	107.5	<LOD	<LOD	109	<LOD	<LOD	<LOD	10297.6	<LOD	<LOD	<LOD	<LOD
X202	6	Pine Lake	65,66	646.4	<LOD	<LOD	224.6	153.1	<LOD	<LOD	9216	<LOD	<LOD	<LOD	<LOD
X202	12	Pine Lake	67,68	4368	<LOD	<LOD	1009.6	224.8	<LOD	<LOD	18099.2	905.6	<LOD	<LOD	<LOD
X202	24	Pine Lake	57,58	1868.8	<LOD	<LOD	344.6	<LOD	<LOD	<LOD	11699.2	<LOD	<LOD	<LOD	<LOD
X202	30	Pine Lake	55,56	66.2	<LOD	<LOD	87.4	<LOD	178.8	<LOD	13696	<LOD	366.6	<LOD	<LOD
X203	6	Pine Lake	69,70	2400	<LOD	<LOD	753.6	848.8	<LOD	<LOD	26675.2	1369.6	<LOD	<LOD	250.6
X203	12	Pine Lake	71,72	4748.8	<LOD	<LOD	1209.6	<LOD	<LOD	<LOD	25190.4	<LOD	<LOD	223.8	<LOD
X203	24	Pine Lake	73,74	12998.4	<LOD	<LOD	2748.8	<LOD	<LOD	<LOD	21696	<LOD	<LOD	290	<LOD
X203	30	Pine Lake	75,76	161.7	<LOD	<LOD	143.7	<LOD	<LOD	<LOD	15897.6	<LOD	<LOD	<LOD	<LOD
X204	6	Pine Lake	77,78	3219.2	<LOD	<LOD	641.6	1040	<LOD	<LOD	30080	1800	<LOD	<LOD	<LOD
X204	12	Pine Lake	79,80	7097.6	<LOD	<LOD	1708.8	330	331.4	<LOD	35097.6	<LOD	634.4	207.8	<LOD
X204	24	Pine Lake	81,82	4307.2	<LOD	<LOD	1080	713.2	<LOD	<LOD	35891.2	<LOD	523.2	83.2	<LOD
X204	30	Pine Lake	83,84	820	<LOD	<LOD	100.3	<LOD	<LOD	<LOD	12096	<LOD	<LOD	<LOD	<LOD
X205	2	Pine Lake	85,86	<LOD	<LOD	<LOD	49.8	<LOD	<LOD	<LOD	4067.2	<LOD	<LOD	<LOD	<LOD
X205	4	Pine Lake (beach)	87,88	18.7	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	3539.2	<LOD	<LOD	<LOD	210.6
X205	5	Pine Lake (beach)	89,90	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	3737.6	<LOD	<LOD	<LOD	<LOD
X206	6	Pine Lake	91,92	1009.6	<LOD	<LOD	192.8	<LOD	<LOD	<LOD	18892.8	<LOD	549.2	<LOD	<LOD
X206	12	Pine Lake	93,94	180.5	<LOD	<LOD	117.7	<LOD	<LOD	<LOD	14400	<LOD	<LOD	<LOD	<LOD
X206	24	Pine Lake	95,96	155.2	<LOD	<LOD	123.5	<LOD	<LOD	<LOD	14694.4	<LOD	<LOD	<LOD	<LOD
X207	6	Pine Lake	97,98	1720	<LOD	<LOD	376	164.6	<LOD	<LOD	14592	<LOD	<LOD	<LOD	<LOD
X207	12	Pine Lake	99, 100	2019.2	<LOD	<LOD	428	393	<LOD	<LOD	16691.2	<LOD	<LOD	<LOD	<LOD
X207	24	Pine Lake	101,102	3059.2	<LOD	<LOD	1009.6	934.4	<LOD	<LOD	29184	<LOD	779.6	<LOD	813.6
X207	30	Pine Lake	103,104	34.2	<LOD	<LOD	70.5	<LOD	<LOD	<LOD	13696	952	<LOD	<LOD	<LOD
X208	6	Pine Lake	105,106	1260	<LOD	<LOD	271.4	410	<LOD	<LOD	16192	<LOD	1200	<LOD	<LOD
X208	12	Pine Lake	108,109	2779.2	<LOD	<LOD	544.4	548	<LOD	<LOD	19494.4	<LOD	568	<LOD	<LOD
X208	24 - 26	Pine Lake	110,111	281.6	<LOD	<LOD	68	<LOD	153.4	<LOD	11398.4	<LOD	713.2	<LOD	<LOD
X208	30	Pine Lake	112,113	73.8	<LOD	<LOD	99.3	<LOD	<LOD	<LOD	18688	<LOD	<LOD	<LOD	<LOD
X209	6	Pine Lake	114,115	8960	<LOD	<LOD	1920	248.2	<LOD	<LOD	24896	<LOD	950.4	127.1	<LOD
X209	12	Pine Lake	116,117	47283.2	1009.6	<LOD	9984	<LOD	<LOD	<LOD	42188.8	2840	<LOD	221.8	<LOD

Table 2
Metal Concentrations in Sediment as Identified by X-Ray Fluorescence

Sample Number	Sample Depth in inches	Sample Location Notes	XRF Reading Number	Metal Concentrations in mg/kg as Identified by X-Ray Fluorescence											
				Lead	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Cadmium	Silver
				Ontario Sediment Screening Benchmarks											
				31	6	0.2	120	16	16	50	20000	460		0.6	0.5
X209	24	Pine Lake	118,119	12998.4	<LOD	<LOD	1868.8	<LOD	<LOD	<LOD	25996.8	<LOD	1720	<LOD	<LOD
X209	30	Pine Lake	120,121	179.3	<LOD	<LOD	103.1	<LOD	<LOD	<LOD	16896	<LOD	610.8	<LOD	<LOD
X210	6	Pine Lake	136,137	86374.4	1029.6	<LOD	13593.6	<LOD	<LOD	<LOD	78950.4	<LOD	2099.2	124.4	<LOD
X210	12	Pine Lake	138,139	16294.4	<LOD	<LOD	3859.2	<LOD	439.6	<LOD	42086.4	<LOD	986.4	103.5	<LOD
X210	18	Pine Lake	142,143	28083.2	<LOD	<LOD	4480	<LOD	<LOD	<LOD	49894.4	4627.2	<LOD	169.8	<LOD
X210	20	Pine Lake	140,141	4508.8	224.4	<LOD	612.8	<LOD	<LOD	<LOD	22195.2	1629.6	<LOD	<LOD	<LOD
X211	6	Pine Lake	144,145	37785.6	864.8	<LOD	2508.8	<LOD	<LOD	<LOD	28595.2	<LOD	<LOD	<LOD	<LOD
X211	12	Pine Lake	146,147	244	<LOD	<LOD	294	<LOD	<LOD	<LOD	22195.2	<LOD	508	<LOD	<LOD
X211	20	Pine Lake	148,149	133.4	<LOD	<LOD	188.4	<LOD	<LOD	<LOD	16294.4	<LOD	<LOD	<LOD	<LOD
X212	6	Pine Lake	150,151	8128	239.8	<LOD	1389.6	<LOD	<LOD	<LOD	21388.8	<LOD	702.8	<LOD	<LOD
X212	12	Pine Lake	152,153	110.7	<LOD	<LOD	132.8	<LOD	512.8	<LOD	18393.6	<LOD	1779.2	<LOD	11398.4
X213	6	Pine Lake	154,155	4960	<LOD	<LOD	802	<LOD	<LOD	<LOD	18995.2	<LOD	484	87.8	<LOD
X213	12	Pine Lake	156,157	1480	<LOD	<LOD	252.8	<LOD	<LOD	<LOD	12000	<LOD	<LOD	<LOD	<LOD
X213	15	Pine Lake	158,159	108.5	<LOD	<LOD	135.4	<LOD	<LOD	<LOD	19788.8	<LOD	875.2	<LOD	<LOD
X214	6	Pine Lake	160,161	35276.8	1129.6	<LOD	7558.4	<LOD	<LOD	<LOD	37376	<LOD	<LOD	372	<LOD
X214	12	Pine Lake	162,163	2739.2	<LOD	<LOD	654.8	654.8	<LOD	<LOD	19993.6	928.8	<LOD	<LOD	<LOD
X214	24	Pine Lake	164,165	19596.8	482.8	<LOD	3080	<LOD	<LOD	<LOD	27878.4	<LOD	<LOD	178	<LOD
X214	30	Pine Lake	166,167	693.6	73.8	<LOD	239.2	<LOD	<LOD	<LOD	14592	<LOD	<LOD	<LOD	<LOD
X215	6	Pine Lake	168,169	878.4	<LOD	<LOD	163.4	150.8	<LOD	<LOD	8704	<LOD	<LOD	<LOD	<LOD
X215	12	Pine Lake	170,171	1560	102.3	<LOD	294	253.2	<LOD	<LOD	12198.4	<LOD	<LOD	<LOD	<LOD
X215	24	Pine Lake	172,173	309.6	<LOD	<LOD	143.9	<LOD	<LOD	<LOD	13094.4	<LOD	<LOD	<LOD	<LOD
X216	6	Pine Lake	174,175	4678.4	<LOD	<LOD	610	<LOD	<LOD	<LOD	11494.4	<LOD	<LOD	111.3	<LOD
X216	12	Pine Lake	176,177	146.7	<LOD	<LOD	83.4	<LOD	<LOD	<LOD	10598.4	<LOD	<LOD	<LOD	<LOD
X217	6	Lake at Woodland Park	178,179	292.6	<LOD	<LOD	129.9	<LOD	<LOD	<LOD	16192	<LOD	<LOD	<LOD	<LOD
X217	12	Lake at Woodland Park	180,181	169.9	<LOD	<LOD	107.8	<LOD	<LOD	<LOD	11494.4	<LOD	<LOD	<LOD	<LOD
X217	24	Lake at Woodland Park	182,183	357.4	<LOD	<LOD	197.7	<LOD	<LOD	<LOD	17292.8	<LOD	<LOD	<LOD	<LOD
X218	6	Lake at Woodland Park	184,185	147.9	<LOD	<LOD	105	<LOD	<LOD	<LOD	12294.4	<LOD	345.4	<LOD	<LOD
X218	12	Lake at Woodland Park	186,187	166.3	<LOD	<LOD	130.3	<LOD	<LOD	<LOD	11596.8	<LOD	<LOD	<LOD	<LOD

Table 2
Metal Concentrations in Sediment as Identified by X-Ray Fluorescence

Sample Number	Sample Depth in inches	Sample Location Notes	XRF Reading Number	Metal Concentrations in mg/kg as identified by X-Ray Fluorescence											
				Lead	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Cadmium	Silver
				Ontario Sediment Screening Benchmarks											
				31	6	0.2	120	16	16	50	20000	460		0.6	0.5
X218	24	Lake at Woodland Park	188,189	150.2	<LOD	<LOD	120.4	<LOD	<LOD	<LOD	12198.4	<LOD	399.8	<LOD	<LOD
X218	30	Lake at Woodland Park	190,191	153	<LOD	<LOD	102	<LOD	<LOD	<LOD	11494.4	<LOD	<LOD	<LOD	<LOD
X219	6	Lake at Woodland Park	192,193	183.6	<LOD	<LOD	186.6	<LOD	<LOD	<LOD	17689.6	<LOD	<LOD	<LOD	<LOD
X219	12	Lake at Woodland Park	194,195	155.9	<LOD	<LOD	129.9	<LOD	<LOD	<LOD	18598.4	<LOD	<LOD	<LOD	<LOD
X219	24	Lake at Woodland Park	196,197	175	31.6	<LOD	142.2	<LOD	<LOD	<LOD	18892.8	<LOD	<LOD	<LOD	<LOD
X219	34	Lake at Woodland Park	198,199	40.3	<LOD	<LOD	<LOD	<LOD	<LOD	325.4	9395.2	704.8	<LOD	<LOD	<LOD
X220	6	Drainage way between two lakes	200,201	101.2	<LOD	<LOD	107	<LOD	<LOD	<LOD	12499.2	<LOD	<LOD	<LOD	<LOD
X220	12	Drainage way between two lakes	202,023	41.3	<LOD	<LOD	91.9	<LOD	<LOD	<LOD	12998.4	<LOD	361	<LOD	<LOD
X220	24	Drainage way between two lakes	204,205	28.7	<LOD	<LOD	77.3	<LOD	<LOD	<LOD	13888	<LOD	<LOD	<LOD	<LOD
X221	6	Drainage way between two lakes	206,207	419.2	<LOD	<LOD	100.4	<LOD	<LOD	<LOD	12396.8	<LOD	<LOD	<LOD	<LOD
X221	12	Drainage way between two lakes	208,209	22.5	<LOD	<LOD	53.1	<LOD	<LOD	<LOD	7846.4	<LOD	<LOD	<LOD	<LOD
X221	24	Drainage way between two lakes	210,211	<LOD	<LOD	<LOD	72.1	<LOD	<LOD	<LOD	9747.2	<LOD	<LOD	<LOD	<LOD
X222	6	Unnamed Pond at Pine Lake Rd.	347	938.4	<LOD	<LOD	354.2	<LOD	<LOD	<LOD	19289.6	<LOD	<LOD	NA	NA

Table 2
Metal Concentrations in Sediment as Identified by X-Ray Fluorescence

Sample Number	Sample Depth in inches	Sample Location Notes	XRF Reading Number	Metal Concentrations in mg/kg as identified by X-Ray Fluorescence											
				Lead	Arsenic	Mercury	Zinc	Copper	Nickel	Cobalt	Iron	Manganese	Chromium	Cadmium	Silver
				Ontario Sediment Screening Benchmarks											
				31	6	0.2	120	16	16	50	20000	460		0.6	0.5
X222	12	Unnamed Pond at Pine Lake Rd.	348	638	<LOD	<LOD	824	<LOD	<LOD	<LOD	35481.6	<LOD	<LOD	NA	NA
X222	24	Unnamed Pond at Pine Lake Rd.	349	833.6	<LOD	<LOD	1739.2	<LOD	398.2	399.6	24998.4	<LOD	<LOD	NA	NA
X223	6	Unnamed Pond at Pine Lake Rd.	350	2099.2	<LOD	<LOD	1140	194.9	192.1	<LOD	10796.8	<LOD	<LOD	NA	NA
X223	12	Unnamed Pond at Pine Lake Rd.	351	36.8	<LOD	<LOD	161	<LOD	<LOD	<LOD	10598.4	<LOD	<LOD	NA	NA
X223	24	Unnamed Pond at Pine Lake Rd.	352	276.4	<LOD	<LOD	235	<LOD	<LOD	<LOD	8499.2	<LOD	<LOD	NA	NA
X224	6	Pond at 21 Pine Lake Dr.	353	82	<LOD	<LOD	58.7	<LOD	<LOD	<LOD	9056	<LOD	<LOD	NA	NA
X224	12	Pond at 21 Pine Lake Dr.	354	35.5	<LOD	<LOD	73.6	<LOD	<LOD	<LOD	8864	<LOD	<LOD	NA	NA
X224	24	Pond at 21 Pine Lake Dr.	355	39.5	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	16793.6	<LOD	<LOD	NA	NA

Notes

1 NA - Soil not analyzed for metal

2 < LOD - Metal is below level of detection

TAble 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R1	215 Pine Lake Rd.	surface	216	331.8	<LOD	154.2	<LOD	<LOD	212.6	<LOD	<LOD
R1	215 Pine Lake Rd.	4	217	517.2	<LOD	195.6	<LOD	<LOD	<LOD	<LOD	<LOD
R1	215 Pine Lake Rd.	6	218	496	<LOD	163.4	<LOD	<LOD	<LOD	<LOD	<LOD
R1	215 Pine Lake Rd.	10	219	445.6	<LOD	162.7	<LOD	<LOD	<LOD	<LOD	<LOD
R2	215 Pine Lake Rd.	surface	220	324.6	<LOD	424.4	<LOD	<LOD	<LOD	<LOD	<LOD
R2	215 Pine Lake Rd.	8	221	281.2	<LOD	370.8	<LOD	<LOD	<LOD	<LOD	<LOD
R3	211 Pine Lake Rd.	surface	222	1000	<LOD	446.8	<LOD	<LOD	<LOD	518	<LOD
R3	211 Pine Lake Rd.	4	223	540	<LOD	183.8	<LOD	<LOD	<LOD	814.4	<LOD
R3	211 Pine Lake Rd.	6	224	162.4	<LOD	117.5	<LOD	<LOD	<LOD	<LOD	<LOD
R4	211 Pine Lake Rd.	surface	225	1160	144.1	890.4	<LOD	<LOD	913.6	<LOD	<LOD
R4	211 Pine Lake Rd.	4	226	960.8	76	456.4	<LOD	<LOD	<LOD	<LOD	<LOD
R4	211 Pine Lake Rd.	6	227	229.6	<LOD	138	<LOD	<LOD	<LOD	<LOD	<LOD
R5	211 Pine Lake Rd.	surface	228	211.2	<LOD	97.3	<LOD	<LOD	<LOD	<LOD	566.8
R5	211 Pine Lake Rd.	4	229	221.8	<LOD	94	<LOD	<LOD	<LOD	<LOD	595.6
R6	5 Pine Lake Drive	2	230	218.2	<LOD	71.4	<LOD	<LOD	<LOD	<LOD	380.2
R6	5 Pine Lake Drive	5	231	242	<LOD	62.3	<LOD	<LOD	<LOD	<LOD	302
R6	5 Pine Lake Drive	7	232	291.8	<LOD	101	<LOD	<LOD	<LOD	721.2	595.2
R6	5 Pine Lake Drive	8	233	333	<LOD	60.7	<LOD	<LOD	<LOD	<LOD	760.4
R6	5 Pine Lake Drive	30	234	333.2	<LOD	100	<LOD	<LOD	270.8	<LOD	378.8
R7	5 Pine Lake Drive	surface	235	327	40.8	110.8	<LOD	161	<LOD	<LOD	826.4
R7	5 Pine Lake Drive	4	236	154.5	<LOD	74.1	<LOD	<LOD	<LOD	<LOD	389.6
R7	5 Pine Lake Drive	8	237	5968	<LOD	527.6	354.2	<LOD	<LOD	<LOD	1249.6
R8	5 Pine Lake Drive	surface	238	2329.6	<LOD	298	<LOD	<LOD	<LOD	774.4	560.4
R9	6 Pine Lake Drive	surface	239	833.6	<LOD	351.4	<LOD	<LOD	<LOD	788.8	477.2
R9	6 Pine Lake Drive	4	240	9318.4	307.6	618	203	<LOD	<LOD	<LOD	621.2
R9	6 Pine Lake Drive	4	242	13388.8	718.8	813.6	267.6	<LOD	<LOD	<LOD	<LOD
R9	6 Pine Lake Drive	12	241	226.2	<LOD	134.8	<LOD	<LOD	<LOD	<LOD	674
R10	6 Pine Lake Drive	surface	243	3228.8	<LOD	421.2	116.7	<LOD	<LOD	<LOD	728.4
R11	6 Pine Lake Drive	2	244	382.4	<LOD	84.6	<LOD	<LOD	<LOD	<LOD	472.8
R11	6 Pine Lake Drive	4	245	114.5	<LOD	91.9	<LOD	<LOD	<LOD	<LOD	666.4
R12	21 Pine Lake Drive	surface	246	62.5	<LOD	55.9	<LOD	<LOD	<LOD	<LOD	<LOD
R12	21 Pine Lake Drive	4	247	89.8	<LOD	69.1	<LOD	<LOD	<LOD	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R12	21 Pine Lake Drive	6	248	31	<LOD	69.8	<LOD	<LOD	<LOD	<LOD	<LOD
R13	20 Pine Lake Drive	2	249	151.8	<LOD	89.6	<LOD	<LOD	<LOD	<LOD	<LOD
R13	20 Pine Lake Drive	4	250	165	<LOD	127.8	<LOD	<LOD	<LOD	<LOD	345
R14	20 Pine Lake Drive	3	251	69.5	<LOD	98.9	<LOD	<LOD	<LOD	<LOD	<LOD
R15	22 Pine Lake Drive	1	252	320.2	<LOD	113.5	<LOD	<LOD	<LOD	<LOD	<LOD
R15	22 Pine Lake Drive	4	253	387	<LOD	93.9	<LOD	<LOD	<LOD	<LOD	<LOD
R15	22 Pine Lake Drive	8	254	461.2	<LOD	106.1	<LOD	<LOD	<LOD	<LOD	<LOD
R16	22 Pine Lake Drive	1	255	83.6	<LOD	73.4	<LOD	<LOD	<LOD	<LOD	<LOD
R16	22 Pine Lake Drive	4	256	94.6	<LOD	98.2	<LOD	<LOD	<LOD	<LOD	663.6
R17	22 Pine Lake Drive	surface	257	1400	<LOD	1249.6	<LOD	<LOD	<LOD	<LOD	<LOD
R17	22 Pine Lake Drive	4	258	692.4	<LOD	556	<LOD	<LOD	<LOD	<LOD	<LOD
R17	22 Pine Lake Drive	8	259	915.2	<LOD	566	<LOD	<LOD	<LOD	<LOD	<LOD
R17	22 Pine Lake Drive	10	260	577.2	<LOD	149.7	<LOD	<LOD	<LOD	<LOD	<LOD
R18	13 Pine Lake Drive	1	261	456.4	<LOD	71.5	<LOD	<LOD	<LOD	<LOD	<LOD
R18	13 Pine Lake Drive	4	262	512.4	<LOD	87.6	<LOD	<LOD	<LOD	581.2	<LOD
R18	13 Pine Lake Drive	8	263	318.8	<LOD	73.4	<LOD	<LOD	<LOD	633.6	281.2
R19	13 Pine Lake Drive	surface	264	670	<LOD	71	<LOD	<LOD	<LOD	<LOD	<LOD
R19	13 Pine Lake Drive	4	265	854.4	<LOD	84.4	<LOD	<LOD	<LOD	<LOD	<LOD
R19	13 Pine Lake Drive	8	266	460.8	<LOD	80.4	<LOD	<LOD	<LOD	500.8	<LOD
R20	16 Pine Lake Road	2	267	182	<LOD	86	<LOD	<LOD	<LOD	<LOD	<LOD
R20	16 Pine Lake Road	4	268	184.2	<LOD	100.1	<LOD	<LOD	<LOD	480.4	<LOD
R21	16 Pine Lake Road	surface	269	824	<LOD	179.7	<LOD	<LOD	<LOD	<LOD	<LOD
R21	16 Pine Lake Road	4	270	1060	<LOD	302.8	<LOD	<LOD	<LOD	<LOD	<LOD
R21	16 Pine Lake Road	8	271	432	<LOD	109.1	<LOD	<LOD	<LOD	554.4	<LOD
R21	16 Pine Lake Road	12	273	1029.6	<LOD	156.2	<LOD	<LOD	<LOD	<LOD	<LOD
R21	16 Pine Lake Road	14	272	1249.6	<LOD	204.1	<LOD	<LOD	696.8	<LOD	<LOD
R22	214 Pine Lake Road	surace	274	174.4	<LOD	51.5	<LOD	<LOD	<LOD	<LOD	<LOD
R22	214 Pine Lake Road	4	275	204.1	<LOD	46.4	<LOD	<LOD	<LOD	<LOD	<LOD
R22	214 Pine Lake Road	8	276	268.6	<LOD	80.1	<LOD	<LOD	180.3	640.8	<LOD
R23	214 Pine Lake Road	surface	277	151.4	<LOD	69.3	<LOD	<LOD	<LOD	<LOD	<LOD
R23	214 Pine Lake Road	4	278	190.8	<LOD	71.7	<LOD	<LOD	<LOD	<LOD	<LOD
R24	4 Pine Lake Drive	surface	279	8198.4	394	1699.2	<LOD	<LOD	483.2	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R24	4 Pine Lake Drive	1 - 3	280	3657.6	131.6	704.4	<LOD	<LOD	<LOD	<LOD	<LOD
R24	4 Pine Lake Drive	4	281	8768	568.8	2169.6	<LOD	<LOD	<LOD	<LOD	<LOD
R24	4 Pine Lake Drive	8	282	3888	150	590	<LOD	<LOD	813.6	<LOD	<LOD
R24	4 Pine Lake Drive	20	283	143.8	<LOD	77.6	<LOD	<LOD	<LOD	<LOD	<LOD
R25	4 Pine Lake Drive	surface	284	2419.2	<LOD	393.6	<LOD	<LOD	<LOD	<LOD	<LOD
R25	4 Pine Lake Drive	4	285	2609.6	129.2	512	<LOD	<LOD	<LOD	<LOD	<LOD
R25	4 Pine Lake Drive	8	286	1289.6	84	1868.8	<LOD	<LOD	1149.6	<LOD	<LOD
R25	4 Pine Lake Drive	24	287	249.6	<LOD	204.8	<LOD	<LOD	<LOD	<LOD	<LOD
R26	4 Pine Lake Drive	surface	288	210.6	<LOD	124.6	<LOD	<LOD	<LOD	472.4	<LOD
R26	4 Pine Lake Drive	4	289	288.4	<LOD	175.7	<LOD	<LOD	248	<LOD	<LOD
R26	4 Pine Lake Drive	8	290	540.8	<LOD	222.4	<LOD	<LOD	<LOD	<LOD	<LOD
R26	4 Pine Lake Drive	16	291	34.7	<LOD	134.7	<LOD	<LOD	<LOD	<LOD	<LOD
R27	4 Briarwood	surface	292	43.8	<LOD	59.7	<LOD	<LOD	<LOD	<LOD	<LOD
R27	4 Briarwood	4	293	42.3	<LOD	64.4	<LOD	<LOD	<LOD	<LOD	<LOD
R27	4 Briarwood	12	294	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R28	4 Briarwood	surface	295	<LOD	<LOD	77.2	<LOD	<LOD	<LOD	<LOD	<LOD
R28	4 Briarwood	4	296	26.1	<LOD	75.1	<LOD	<LOD	<LOD	<LOD	<LOD
R28	4 Briarwood	12	297	36.3	<LOD	76.2	<LOD	<LOD	<LOD	<LOD	<LOD
R29	4 Briarwood	surface	298	29.4	<LOD	79.7	<LOD	<LOD	<LOD	749.2	<LOD
R30	7 Briarwood	surface	301	429.2	<LOD	109.9	<LOD	158.8	<LOD	<LOD	<LOD
R30	7 Briarwood	4	302	264.6	<LOD	141.5	<LOD	<LOD	<LOD	<LOD	<LOD
R30	7 Briarwood	8	303	245.4	<LOD	142.6	<LOD	<LOD	<LOD	<LOD	<LOD
R31	7 Briarwood	surface	305	694	<LOD	110.4	<LOD	<LOD	<LOD	<LOD	347
R31	7 Briarwood	4	306	581.2	<LOD	143.4	<LOD	<LOD	303.6	<LOD	<LOD
R31	7 Briarwood	8	308	516	<LOD	124.4	<LOD	<LOD	<LOD	<LOD	405.2
R31	7 Briarwood	12	307	67.3	<LOD	81	<LOD	153	<LOD	<LOD	<LOD
R32	100 Tessy Lane	surface	309	988.8	<LOD	223.2	<LOD	<LOD	<LOD	<LOD	<LOD
R32	100 Tessy Lane	4	310	1920	<LOD	364.6	<LOD	<LOD	<LOD	<LOD	<LOD
R32	100 Tessy Lane	8	311	1540	<LOD	413.6	<LOD	183.8	<LOD	<LOD	<LOD
R32	100 Tessy Lane	12	312	10195.2	268.6	972	253.6	<LOD	<LOD	<LOD	<LOD
R32	100 Tessy Lane	18	313	3689.6	126.6	489.6	<LOD	<LOD	<LOD	<LOD	<LOD
R33	100 Tessy Lane	2	314	75.3	<LOD	43	<LOD	<LOD	<LOD	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R33	100 Tessy Lane	4	315	395	<LOD	58.8	<LOD	<LOD	225.6	<LOD	<LOD
R33	100 Tessy Lane	8	316	1020	<LOD	118.8	<LOD	<LOD	<LOD	<LOD	<LOD
R33	100 Tessy Lane	12	317	988	<LOD	103.3	<LOD	<LOD	<LOD	<LOD	<LOD
R33	100 Tessy Lane	24	318	597.2	52.9	162.4	<LOD	<LOD	<LOD	<LOD	<LOD
R34	1871 Raintree	2	319	73.9	<LOD	76	<LOD	<LOD	335.6	<LOD	290.2
R34	1871 Raintree	4	320	102.6	<LOD	90	<LOD	<LOD	<LOD	<LOD	398.2
R34	1871 Raintree	24	321	1609.6	<LOD	215.2	<LOD	<LOD	<LOD	<LOD	<LOD
R35	1871 Raintree	2	322	70.4	<LOD	100.8	<LOD	<LOD	<LOD	<LOD	<LOD
R35	1871 Raintree	24	323	182.4	<LOD	75.1	<LOD	<LOD	275.4	<LOD	<LOD
R35	1871 Raintree	30	324	65.2	<LOD	87.1	<LOD	<LOD	<LOD	<LOD	<LOD
R36	1009 Hickory Point	2	325	47.7	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R36	1009 Hickory Point	8	326	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R36	1009 Hickory Point	24	327	279.6	<LOD	87.5	<LOD	<LOD	282.2	<LOD	<LOD
R37	1020 Pine Lake Road	surface	331	157.6	<LOD	169.9	<LOD	<LOD	<LOD	<LOD	<LOD
R37	1020 Pine Lake Road	4	332	217.2	<LOD	241.8	<LOD	<LOD	<LOD	<LOD	<LOD
R37	1020 Pine Lake Road	8	333	171.6	<LOD	239.4	<LOD	<LOD	<LOD	<LOD	<LOD
R38	1020 Pine Lake Road	surface	334	1389.6	<LOD	1389.6	152	<LOD	<LOD	<LOD	<LOD
R38	1020 Pine Lake Road	0 - 1	335	1760	<LOD	1920	210.4	220.4	378	<LOD	<LOD
R39		surface	336	6080	<LOD	5587.2	1369.6	798.8	<LOD	<LOD	<LOD
R40		surface	337	5868.8	<LOD	3449.6	1409.6	526.8	800.8	<LOD	<LOD
R41		surface	338	2809.6	<LOD	2388.8	677.2	416	<LOD	1129.6	<LOD
R42		surface	339	1329.6	<LOD	4089.6	346.8	398.2	<LOD	<LOD	<LOD
R43		surface	340	5897.6	<LOD	7347.2	2899.2	679.2	<LOD	<LOD	<LOD
R44		surface	341	830.4	<LOD	1209.6	<LOD	<LOD	<LOD	<LOD	<LOD
R45		surface	342	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R46	1020 Pine Lake Road	surface	343	50.4	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R46	1020 Pine Lake Road	6	344	42	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R46	1020 Pine Lake Road	12	345	39.1	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R46	1020 Pine Lake Road	24	346	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R47	1029 Hickory Point	2	356	109.7	<LOD	93.4	<LOD	<LOD	<LOD	<LOD	<LOD
R47	1029 Hickory Point	8	357	74.7	<LOD	121.6	<LOD	<LOD	<LOD	<LOD	291.2
R47	1029 Hickory Point	18	358	38.8	<LOD	65.8	<LOD	<LOD	292.4	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R48	1029 Hickory Point	2	359	166.6	<LOD	108.2	<LOD	<LOD	<LOD	<LOD	<LOD
R49	1029 Hickory Point	surface	360	67	<LOD	95.8	<LOD	<LOD	<LOD	<LOD	<LOD
R49	1029 Hickory Point	6	361	102.7	<LOD	97.7	<LOD	<LOD	<LOD	<LOD	<LOD
R50	1028 Hickory Point	surface	362	218.6	<LOD	71.9	<LOD	<LOD	235	<LOD	<LOD
R50	1028 Hickory Point	6	363	194.3	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R51	6 Cedar Point	2	364	51.5	<LOD	85.5	<LOD	<LOD	<LOD	<LOD	<LOD
R52	6 Cedar Point	surface	365	68.9	<LOD	80.2	<LOD	<LOD	<LOD	<LOD	<LOD
R52	6 Cedar Point	24	366	33.9	<LOD	70.3	<LOD	<LOD	285.8	<LOD	307.8
R53	6 Cedar Point	1 - 2	367	1819.2	<LOD	300	<LOD	<LOD	<LOD	<LOD	<LOD
R54	4 Driftwood	1	368	171.1	<LOD	96.8	<LOD	<LOD	<LOD	<LOD	<LOD
R54	4 Driftwood	10	369	561.6	<LOD	103.1	<LOD	132.2	<LOD	<LOD	299
R54	4 Driftwood	14	370	546.4	<LOD	106.5	<LOD	<LOD	211.2	<LOD	<LOD
R54	4 Driftwood	24	371	34.5	<LOD	70	<LOD	155.1	<LOD	<LOD	340
R55	1016 Hickory Point	surface	372	33.3	20.5	84.8	<LOD	<LOD	<LOD	<LOD	<LOD
R55	1016 Hickory Point	6	373	71.7	<LOD	90.6	<LOD	<LOD	<LOD	<LOD	<LOD
R56	1016 Hickory Point	surface	374	1720	<LOD	194.6	<LOD	<LOD	356.2	<LOD	<LOD
R56	1016 Hickory Point	6	375	522.8	65.1	126.6	<LOD	<LOD	<LOD	<LOD	<LOD
R56	1016 Hickory Point	12	376	1189.6	<LOD	196.4	<LOD	<LOD	393.2	<LOD	<LOD
R56	1016 Hickory Point	18	377	2249.6	<LOD	236.2	<LOD	<LOD	<LOD	<LOD	385.6
R56	1016 Hickory Point	24	378	352.8	<LOD	117.6	<LOD	<LOD	<LOD	<LOD	<LOD
R57	1016 Hickory Point	surface	379	28.2	<LOD	50.5	<LOD	<LOD	<LOD	<LOD	<LOD
R57	1016 Hickory Point	10	380	84.4	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R57	1016 Hickory Point	18	381	87.7	<LOD	117.7	<LOD	<LOD	<LOD	<LOD	<LOD
R57	1016 Hickory Point	24	382	272	<LOD	173.8	<LOD	<LOD	<LOD	<LOD	<LOD
R58	1965 Rain Tree	1	383	28800	768.4	1600	227.2	<LOD	<LOD	<LOD	<LOD
R58	1965 Rain Tree	4	384	90572.8	4579.2	5628.8	810.4	982.4	<LOD	<LOD	<LOD
R58	1965 Rain Tree	8	385	46182.4	2108.8	2819.2	505.2	<LOD	<LOD	<LOD	<LOD
R58	1965 Rain Tree	16	386	48179.2	1680	2588.8	399.2	504	<LOD	<LOD	<LOD
R59	2002 Rain Tree	surface	387	40.6	<LOD	73.5	<LOD	<LOD	<LOD	<LOD	<LOD
R59	2002 Rain Tree	6	388	66	<LOD	74	<LOD	<LOD	<LOD	<LOD	<LOD
R59	2002 Rain Tree	12	389	118.8	<LOD	104.8	<LOD	<LOD	<LOD	<LOD	<LOD
R59	2002 Rain Tree	24	390	<LOD	<LOD	103.2	<LOD	<LOD	<LOD	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R60	733 Peach Tree	surface	391	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R60	733 Peach Tree	6	392	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R60	733 Peach Tree	16	393	37.1	<LOD	88.3	<LOD	<LOD	<LOD	<LOD	<LOD
R60	733 Peach Tree	24	394	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R61	1997 Lemon Tree	1	395	<LOD	<LOD	81	<LOD	<LOD	<LOD	<LOD	<LOD
R61	1997 Lemon Tree	4	396	49	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R61	1997 Lemon Tree	18	397	233.4	<LOD	56.7	<LOD	<LOD	<LOD	<LOD	<LOD
R61	1997 Lemon Tree	24	398	45.2	<LOD	87.2	<LOD	<LOD	<LOD	<LOD	<LOD
R62	1909 Pinehurst Court	surface	399	79.7	<LOD	67.5	<LOD	<LOD	<LOD	<LOD	<LOD
R62	1909 Pinehurst Court	surface	400	254.2	<LOD	138.2	<LOD	<LOD	<LOD	<LOD	426.4
R62	1909 Pinehurst Court	4	401	203.1	42.4	100.9	<LOD	<LOD	<LOD	<LOD	<LOD
R63	1909 Pinehurst Court	1	402	40.6	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R63	1909 Pinehurst Court	6	403	39	<LOD	113	<LOD	<LOD	<LOD	<LOD	<LOD
R63	1909 Pinehurst Court	24	404	28.9	<LOD	98.6	<LOD	<LOD	<LOD	<LOD	<LOD
R64	1909 Pinehurst Court	3	405	200.3	<LOD	884.8	<LOD	284.8	444.8	1220	<LOD
R65	1911 Pinehurst Court	surface	406	93	<LOD	106.1	<LOD	<LOD	<LOD	<LOD	<LOD
R65	1911 Pinehurst Court	6	407	36.6	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R65	1911 Pinehurst Court	12	408	103.8	<LOD	92.2	<LOD	<LOD	<LOD	<LOD	<LOD
R65	1911 Pinehurst Court	14	409	92.9	<LOD	77.5	<LOD	<LOD	<LOD	<LOD	508.4
R65	1911 Pinehurst Court	24	410	98.2	<LOD	84.4	<LOD	<LOD	<LOD	<LOD	<LOD
R66	1989 Banyon Tree	1	411	45	<LOD	76.5	<LOD	<LOD	<LOD	<LOD	<LOD
R66	1989 Banyon Tree	4	412	56.2	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R67	1505 California	1	413	221.6	<LOD	87.6	<LOD	<LOD	<LOD	<LOD	<LOD
R67	1505 California	6	414	188.7	<LOD	93.9	<LOD	<LOD	<LOD	<LOD	<LOD
R67	1505 California	12	415	590.4	<LOD	145.9	<LOD	<LOD	234.6	<LOD	<LOD
R67	1505 California	24	416	43	<LOD	74.5	<LOD	<LOD	<LOD	<LOD	<LOD
R68	1505 California	surface	417	333.2	<LOD	82.1	<LOD	<LOD	<LOD	<LOD	<LOD
R68	1505 California	6	418	864.8	<LOD	155.3	<LOD	<LOD	<LOD	<LOD	362
R68	1505 California	12	419	1369.6	<LOD	149.5	<LOD	<LOD	<LOD	<LOD	<LOD
R68	1505 California	24	420	42.4	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R69	1711 California	surface	421	252.4	<LOD	99.3	<LOD	<LOD	<LOD	<LOD	<LOD
R69	1711 California	6	422	324	<LOD	144.4	<LOD	<LOD	<LOD	<LOD	<LOD

TABLE 3

Residential X-Ray Fluorescence Soil Analysis Results in Parts Per Million

Sample Number	Sample Number Modifier	Sample Depth (inches)	XRF Reading Number	Pb	As	Zn	Cu	Ni	Co	Mn	Cr
				Residential Corrective Action Objectives in mg/kg							
				400	11.3	23000	2900	1600	4700	3700	230
R69	1711 California	12	423	57.2	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
R69	1711 California	24	424	136.5	<LOD	135.9	<LOD	<LOD	<LOD	<LOD	<LOD
R70	1711 California	surface	426	103.6	<LOD	97.8	<LOD	<LOD	<LOD	<LOD	<LOD
R70	1711 California	6	427	199.6	<LOD	114.7	<LOD	<LOD	<LOD	<LOD	<LOD
R70	1711 California	12	428	49.8	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD

Notes

1 NA - Soil not analyzed for metal

2 < LOD - Metal is below level of detection

3 Error column next to each metal displays the margin of error for each compound detected (+, or -).

TABLE 4
Residential Soil Laboratory Analysis Results

Sample Number :	ME00Q8		ME00Q9		ME00R0		ME00R1		ME00R2		ME00R3	
Address	6 Pine Lake Dr		4 Pine Lake Dr		4 Pine Lake Dr		1020 Pine Lake Rd		6 Cedar Point		1911 Pinehurst Ct.	
Sampling Location :	X101		X102		X103		X104		X105		X106	
Matrix :	Soil		Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	03/07/2002		03/07/2002		03/07/2002		03/08/2002		03/08/2002		03/08/2002	
Time Sampled :	10:37		14:50		14:50		08:15		11:55		13:55	
%Solids :	71.1		72.7		72.6		79.6		75.7		60.9	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	4610		7970		6180		8050		6050		6940	
ANTIMONY	55.0	J	4.9	J	5.3	J	8.8	J	1.3	J	1.0	UJ
ARSENIC	28.8		12.9		12.4		11.5		9.9		11.6	
BARIUM	250		359		349		317		110		150	
BERYLLIUM	0.52		0.84		0.68		0.75		0.53		0.92	
CADMIUM	30.6		16.0		16.2		1.1		17.4		9.0	
CALCIUM	17700		15200		23500		32000		55900		37000	
CHROMIUM	10.5		13.4		9.9		13.4		10.7		17.3	
COBALT	44.1	J	14.9	J	70.6	J	225	J	33.8	J	137	J
COPPER	526		70.8		99.1		321		58.6		80.8	
IRON	30700		29400		28700		63100		16800		29500	
LEAD	36700	J	6730	J	6550	J	6680	J	2730	J	389	
MAGNESIUM	2170		4700		4280		8350		3720		14500	
MANGANESE	1220		616		592		780		1100		2030	
MERCURY	0.64		0.28		0.23		0.070		0.57		0.090	
NICKEL	211		32.6		36.1		163		32.5		460	
POTASSIUM	1180		1700		1330		2480		720		1210	
SELENIUM	3.5		0.85		0.94		1.3		0.66	U	2.4	
SILVER	10.9		0.37	J	0.48	J	0.28	U	0.29	U	0.36	U
SODIUM	924		2490		2560		5850	J	1160		1620	
THALLIUM	1.5	J	1.2	U	1.2	U	2.6	J	1.1	U	1.4	U
VANADIUM	16.8		23.0		19.3		17.4		22.0		28.1	
ZINC	775	J	3390	J	3970	J	10000	J	698	J	1460	J
CYANIDE	0.40	J	0.060	UJ	0.060	UJ	0.050	UJ	0.050	UJ	0.070	UJ

Appendix A
Target Compound List

TARGET COMPOUND LIST

Volatile Target Compounds

Chloromethane	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene
Vinyl Chlorde	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropene
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroehtene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
2-Butanone	Toluene
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethylbenzene
Vinyl Acetate	Styrene
Bromodichloromethane	Xylenes (total)

Base/Neutral Target Compounds

Hexachloroethane	2,4-Dinitrotoluene
bis(2-Chloroethyl) Ether	Diethylphthalate
Benzyl Alcohol	N-Nitrosodiphenylamine
bis (2-Chloroisopropyl) Ether	Hexachlorobenzene
N-Nitroso-Di-n-Propylamine	Phenanthrene
Nitrobenzene	4-Bromophenyl-phenylether
Hexachlorobutadiene	Anthracene
2-Methylnaphthalene	Di-n-Butylphthalate

1,2,4-Trichlorobenzene	Fluoranthene
Isophorone	Pyrene
Naphthalene	Butylbenzylphthalate
4-Chloroaniline	bis(2-Ethylhexyl)Phthalate
bis(2-chloroethoxy)Methane	Chrysene
Hexachlorocyclopentadiene	Benzo(a)Anthracene
2-Chloronaphthalene	3-3'-Dichlorobenzidene
2-Nitroaniline	Di-n-Octyl Phthalate
Acenaphthylene	Benzo(b)Fluoranthene
3-Nitroaniline	Benzo(k)Fluoranthene
Acenaphthene	Benzo(a)Pyrene
Dibenzofuran	Ideno(1,2,3-cd)Pyrene
Dimethyl Phthalate	Dibenz(a,h)Anthracene
2,6-Dinitrotoluene	Benzo(g,h,i)Perylene
Fluorene	1,2-Dichlorobenzene
4-Nitroaniline	1,3-Dichlorobenzene
4-Chlorophenyl-phenylether	1,4-Dichlorobenzene

Acid Target Compounds

Benzoic Acid	2,4,6-Trichlorophenol
Phenol	2,4,5-Trichlorophenol
2-Chlorophenol	4-Chloro-3-methylphenol
2-Nitrophenol	2,4-Dinitrophenol
2-Methylphenol	2-Methyl-4,6-dinitrophenol
2,4-Dimethylphenol	Pentachlorophenol
4-Methylphenol	4-Nitrophenol
2,4-Dichlorophenol	

Pesticide/PCB Target Compounds

alpha-BHC	Endrin Ketone
beta-BHC	Endosulfan Sulfate
delta-BHC	Methoxychlor
gamma-BHC (Lindane)	alpha-Chlordane
Heptachlor	gamma-Chlordane
Aldrin	Toxaphene
Heptachlor epoxide	Aroclor-1016
Endosulfan I	Aroclor-1221
4,4'-DDE	Aroclor-1232
Dieldrin	Aroclor-1242
Endrin	Aroclor-1248
4,4'-DDD	Aroclor-1254
Endosulfan II	Aroclor-1260
4,4'-DDT	

Inorganic Target Compounds

Aluminum	Manganese
Antimony	Mercury
Arsenic	Nickel
Barium	Potassium
Beryllium	Selenium
Cadmium	Silver
Calcium	Sodium
Chromium	Thallium
Cobolt	Vanadium
Copper	Zinc
Iron	Cyanide
Lead	Sulfide
Magnesium	

Appendix B
Laboratory Analysis and Chain of Custody Forms

DATE: April 10, 2002

IEPA
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Attn: Bob Casper

SITE NAME: Lead Smelter

CASE NO.	LAB	NO. OF SAMPLES	SDG	MATRIX
30310	Sentinel	6	ME00Q8	Soil

==========

Upon receipt of data, please check each package for completeness and note any missing deliverables below.

Send this form back to Sylvia Griffin, Data Management Coordinator after filling in the blanks below.

Data Received by:_____ Date:_____

PROBLEMS:

Please indicate if data is complete, and note if there are any deliverables missing from the cases noted above.

_____

_____

Received by Data Management Coordinator, CRL for file.
Date:_____

Signature:_____

FROM: U.S. EPA
Region V
Central Regional Laboratory
536 S. Clark, 10th Floor
Chicago, IL 60605

Sent By: Eva M. Dixon, Sr. Data Specialist
ESAT

APR 15 2002

Case Number : 30310
Site Name: Lead Smelter

SDG Number: ME00Q8
Laboratory: Sentinel

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

NUMBER (##) MATRIX samples numbered ##, were collected on DATE. The lab received the samples on DATE in good condition. All samples were analyzed for metals and cyanide. All samples were analyzed using CLP SOW ILM04.1 analysis procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using the MIDI Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectrometric procedure.

Assembled By: ESAT
Date: April 9, 2002

APR 1 0 2002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: April 9, 2002

SUBJECT: Review of Data
Received for Review on April 4, 2002

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: IEPA

The data in this case has not been validated.
We have compiled the CADRE files into a narrative format for the following case:

SITE NAME: Lead Smelter

CASE NUMBER: 30310 **SDG NUMBER:** ME00Q8

Number and Type of Samples: 6 soils

Sample Numbers: ME00Q8,9; ME00R0-3

Laboratory: Sentinel Hrs. for Review: 2

Following are our findings:

CC: Cecilia Moore
Region 5 TPC
Mail Code: SM-5J

APR 1 5 2002

Case Number : 30310
Site Name: Lead Smelter

SDG Number: ME00Q8
Laboratory: Sentinel

CRDL Standards Report

SDG NO: ME00Q8

DC-373: The following inorganic samples are associated with a CRDL standard with low percent recovery.

Selenium
ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R2, ME00R3
PBS02

DC-374: The following inorganic samples are associated with a CRDL standard with high percent recovery.
Hits and non-detects are flagged .

Arsenic
ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R2, ME00R3
PBS02

Lead
ME00Q8

3 BLANKS:

Laboratory Blanks Report

SDG NO: ME00Q8

LABORATORY BLANKS CRITERIA

DC-283: The following inorganic samples are associated with a blank analyte with negative concentration whose absolute value is greater than the instrument detection limit (IDL). Professional judgement should be used to qualify the data.

ME00Q8
Cyanide

ME00Q9
Magnesium, Cyanide

ME00R0
Magnesium, Cyanide

ME00R1
Cyanide

ME00R1A
Cyanide

ME00R1D
Cyanide

ME00R1S

Assembled By: ESAT
Date: April 9, 2002

Case Number : 30310
Site Name: Lead Smelter

SDG Number: ME00Q8
Laboratory: Sentinel

1. HOLDING TIME:

Holding Time Report

SDG NO: ME00Q8

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

DC-28: The following inorganic soil samples were reviewed for holding time violations using criteria developed for water samples.

ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R1D, ME00R1S
ME00R2, ME00R3

2. CALIBRATIONS:

Calibration Report

SDG NO: ME00Q8

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems found for this qualification.

Assembled By: ESAT
Date: April 9, 2002

Case Number : 30310 SDG Number: ME00Q8
Site Name: Lead Smelter Laboratory: Sentinel

DC-268: The following inorganic samples are associated with a matrix spike recovery which is low (30-74 %) indicating that sample results may be biased low.
Hits are qualified "J" and non-detects are qualified "UJ".

Antimony
ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R1A, ME00R1D
ME00R2, ME00R3

Cyanide
ME00Q8, ME00Q9; ME00R0, ME00R1, ME00R1A, ME00R1D
ME00R2, ME00R3

LCS Report

SDG NO: ME00Q8

No problems found for this qualification.

5. LABORATORY AND FIELD DUPLICATE

Duplicates Report

SDG NO: ME00Q8

No problems found for this qualification.

6. ICP ANALYSIS

ICS Report

SDG NO: ME00Q8

DC-312: The following inorganic samples have elements other than Al, Ca, Fe, and Mg at concentrations higher than 10 ppm that may cause potential interference.
Hits are flagged "J" and non-detects are qualified "UJ".

Lead
ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R2

Sodium
ME00R1

Zinc
ME00Q9, ME00R0, ME00R1

Assembled By: ESAT
Date: April 9, 2002

Cyanide

ME00R2
Magnesium, Cyanide

ME00R3
Magnesium, Cyanide

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Antimony
ME00Q9, ME00R0, ME00R1A, ME00R2

Cobalt
ME00R1A

Silver
ME00Q9, ME00R0, ME00R1D

Thallium
ME00Q8, ME00R1, ME00R1D

DC-338: Durin ing inorganic samples, the reported IDL/de. . C as us- for cyanide.

ME00Q8, ME00Q , ME00R1, ME00R1A, ME00R1D
ME00R1S, ME00R 43

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

Matrix Spike Report

SDG NO: ME00Q8

MATRIX SPIKE CRITERIA

Inorganic

Percent Recovery Limits

Upper	125.0
Lower	75.0
Extreme lower	30.0

DC-267: The following inorganic samples are associated with a matrix spike recovery which is high (>125%).
Hits are qualified "J" and non-detects are not flagged.

Cobalt
ME00Q8, M 119, ME00R1, ME00R1, ME00R1A, ME00R1D
ME00R1, M 0R1

Assembled By: ESAT
Date: April 9, 2002

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Case Number : 30310
Site Name: Lead Smelter

SDG Number: ME00Q8
Laboratory: Sentinel

Serial Dilution Report

SDG NO: ME00Q8

DC-295: The following inorganic samples are associated with an ICP serial dilution percent difference which is not in criteria. The serial dilution result is greater than the sample result, indicating a potential negative interference. The data must be qualified using professional judgement. Hits are qualified "J", non-detects "UJ".

Zinc
ME00Q8, ME00Q9, ME00R0, ME00R1, ME00R1D, ME00R1S
ME00R2, ME00R3

7. GFAA ANALYSIS

Furnace AA QC Report

SDG NO: ME00Q8

No problems found for this qualification.

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

Sample Result Verification Report

SDG NO: ME00Q8

No problems found for this qualification.

Assembled By: ESAT
Date: April 9, 2002

Case #: 30310 SDG : ME00Q8
Site : LEAD SMELTER
Lab. : SENTIN
Reviewer :
Date :

Sample Number :	ME00R3		ME00R1D		ME00R1S					
Sampling Location :	X106		X104		X104					
Matrix :	Soil		Soil		Soil					
Units :	mg/Kg		mg/Kg		mg/Kg					
Date Sampled :	03/08/2002		03/08/2002		03/08/2002					
Time Sampled :	13:55		08:15		08:15					
%Solids :	60.9		77.7		79.6					
Dilution Factor :	1.0		1.0		1.0					
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	6940		7650							
ANTIMONY	1.0	UJ	6.9	J	89.0					
ARSENIC	11.6		15.0		24.0					
BARIUM	150		217		750					
BERYLLIUM	0.92		0.64		12.9					
CADMIUM	9.0		1.8		12.6					
CALCIUM	37000		24900							
CHROMIUM	17.3		13.2		68.9					
COBALT	137	J	249	J	452					
COPPER	80.8		392		394					
IRON	29500		51700							
LEAD	389		5630		5110					
MAGNESIUM	14500		7020							
MANGANESE	2030		700		1400					
MERCURY	0.090		0.060	U	0.61					
NICKEL	460		230		259					
POTASSIUM	1210		1870							
SELENIUM	2.4		1.9		3.8					
SILVER	0.36	U	0.63	J	11.5					
SODIUM	1620		5960							
THALLIUM	1.4	U	1.8	J	14.1					
VANADIUM	28.1		19.5		137					
ZINC	1460	J	10900	J	13600	J				
CYANIDE	0.070	UJ	0.050	UJ	3.5					

Case # 30310 SDG ME00Q8
Site LEAD SMELTER Number of Soil Samples : 6
Lab SENTIN Number of Water Samples : 0
Reviewer
Date

Sample Number	ME00Q8		ME00Q9		ME00R0		ME00R1		ME00R2	
Sampling Location	X101		X102		X103		X104		X105	
Matrix	Soil		Soil		Soil		Soil		Soil	
Units	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled	03/07/2002		03/07/2002		03/07/2002		03/08/2002		03/08/2002	
Time Sampled	10:37		14:50		14:50		08:15		11:55	
%Solids	71.1		72.7		72.6		79.6		75.7	
Dilution Factor	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	4610		7970		6180		8050		6050	
ANTIMONY	55.0	J	4.9	J	5.3	J	8.8	J	1.3	J
ARSENIC	28.8		12.9		12.4		11.5		9.9	
BARIUM	250		359		349		317		110	
BERYLLIUM	0.52		0.84		0.68		0.75		0.53	
CADMIUM	30.6		16.0		16.2		1.1		17.4	
CALCIUM	17700		15200		23500		32000		55900	
CHROMIUM	10.5		13.4		9.9		13.4		10.7	
COBALT	44.1	J	14.9	J	70.6	J	225	J	33.8	J
COPPER	526		70.8		99.1		321		58.6	
IRON	30700		29400		28700		63100		16800	
LEAD	36700	J	6730	J	6550	J	6680	J	2730	J
MAGNESIUM	2170		4700		4280		8350		3720	
MANGANESE	1220		616		592		780		1100	
MERCURY	0.64		0.28		0.23		0.070		0.57	
NICKEL	211		32.6		36.1		163		32.5	
POTASSIUM	1180		1700		1330		2480		720	
SELENIUM	3.5		0.85		0.94		1.3		0.66	U
SILVER	10.9		0.37	J	0.48	J	0.28	U	0.29	U
SODIUM	924		2490		2560		5850	J	1160	
THALLIUM	1.5	J	1.2	U	1.2	U	2.6	J	1.1	U
VANADIUM	16.8		23.0		19.3		17.4		22.0	
ZINC	775	J	3390	J	3970	J	10000	J	698	J
CYANIDE	0.40	J	0.060	UJ	0.060	UJ	0.050	UJ	0.050	UJ

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 30310
DAS No:
SDG No: ME00Q8

L

Date Shipped: 3/19/02 Carrier Name: FedEx Airbill: 832617774125 Shipped to: Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	Date Received/Received by: 3/20/02 K Fisher Lab Contract No: 68W00085 Unit Price: 100.00 Transfer To: Date Received/Received By: Lab Contract No: Price:	Sampler (Signature): Gerald E Wilman Relinquished By: Gerald E Wilman	Date / Time: 3/19 1530 Received By: K Fisher
		Relinquished By:	Date / Time: Received By:
		Relinquished By:	Date / Time: Received By:

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME00Q8	Soil/Sediment/ Jerry Wilman	M/G	TM/CN (21)	5-143912 (Ice Only) (1)	X101	3/7/02 10:37		
ME00Q9	Soil/Sediment/ Jerry Wilman	M/G	TM/CN (21)	5-143913 (Ice Only) (1)	X102	3/7/02 14:50		
ME00R0	Soil/Sediment/ Jerry Wilman	M/G	TM/CN (21)	5-143914 (Ice Only) (1)	X103	3/7/02 14:50		
ME00R1	Soil/Sediment/ Jerry Wilman	L/G	TM/CN (21)	5-143915 (Ice Only) (1)	X104	3/8/02 8:15		
ME00R2	Soil/Sediment/ Jerry Wilman	L/G	TM/CN (21)	5-143916 (Ice Only) (1)	X105	3/8/02 11:55		
ME00R3	Soil/Sediment/ Jerry Wilman	L/G	TM/CN (21)	5-143917 (Ice Only) (1)	X106	3/8/02 13:55		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: ME00R1	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4.0°C	Chain of Custody Seal Number: 67300
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? Y	Shipment Iced? Y

TM/CN = CLP TAL Total Metals and Cyanide

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PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Contract Laboratory Analytical Services Support 300 Edmund Halley Dr., Reston, VA. 20191-3436 Ph 703/264-9348 Fax 703/264-9222

TR Number: 5-324306854-031902-0001

APR 04 2002

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

SOW No.: ILM04.1

EPA SAMPLE NO.	Lab Sample ID.
ME00Q8	43504S
ME00Q9	43505S
ME00R0	43506S
ME00R1	43507S
ME00R1D	43507S2
ME00R1S	43507MS
ME00R2	43508S
ME00R3	43509S

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:

Name: BARLOWE Title: QA Officer Date: 4/2/02

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00Q8

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Lab Sample ID: 43504S

Level (low/med): LOW Date Received: 03/20/02

% Solids: 71.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4610			P
7440-36-0	Antimony	55.0		N	P
7440-38-2	Arsenic	28.8		*	P
7440-39-3	Barium	250		*	P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	30.6			P
7440-70-2	Calcium	17700		*	P
7440-47-3	Chromium	10.5			P
7440-48-4	Cobalt	44.1		N	P
7440-50-8	Copper	526			P
7439-89-6	Iron	30700			P
7439-92-1	Lead	36700			P
7439-95-4	Magnesium	2170			P
7439-96-5	Manganese	1220			P
7439-97-6	Mercury	0.64			CV
7440-02-0	Nickel	211		*	P
7440-09-7	Potassium	1180	B		P
7782-49-2	Selenium	3.5			P
7440-22-4	Silver	10.9			P
7440-23-5	Sodium	924	B		P
7440-28-0	Thallium	1.5	B		P
7440-62-2	Vanadium	16.8			P
7440-66-6	Zinc	775		E	P
	Cyanide	0.40	B	N	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00Q9

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Lab Sample ID: 43505S

Level (low/med): LOW Date Received: 03/20/02

Solids: 72.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7970			P
7440-36-0	Antimony	4.9	B	N	P
7440-38-2	Arsenic	12.9		*	P
7440-39-3	Barium	359		*	P
7440-41-7	Beryllium	0.84	B		P
7440-43-9	Cadmium	16.0			P
7440-70-2	Calcium	15200		*	P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	14.9		N	P
7440-50-8	Copper	70.8			P
7439-89-6	Iron	29400			P
7439-92-1	Lead	6730			P
7439-95-4	Magnesium	4700			P
7439-96-5	Manganese	616			P
7439-97-6	Mercury	0.28			CV
7440-02-0	Nickel	32.6		*	P
7440-09-7	Potassium	1700			P
7782-49-2	Selenium	0.85	B		P
7440-22-4	Silver	0.37	B		P
7440-23-5	Sodium	2490			P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	23.0			P
7440-66-6	Zinc	3390		E	P
	Cyanide	0.06	U	N	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00R0

ab Name: Sentinel, Inc. Contract: 68-W-00-085

ab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

atrix (soil/water): SOIL Lab Sample ID: 43506S

evel (low/med): LOW Date Received: 03/20/02

Solids: 72.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6180			P
7440-36-0	Antimony	5.3	B	N	P
7440-38-2	Arsenic	12.4		*	P
7440-39-3	Barium	349		*	P
7440-41-7	Beryllium	0.68	B		P
7440-43-9	Cadmium	16.2			P
7440-70-2	Calcium	23500		*	P
7440-47-3	Chromium	9.9			P
7440-48-4	Cobalt	70.6		N	P
7440-50-8	Copper	99.1			P
7439-89-6	Iron	28700			P
7439-92-1	Lead	6550			P
7439-95-4	Magnesium	4280			P
7439-96-5	Manganese	592			P
7439-97-6	Mercury	0.23			CV
7440-02-0	Nickel	36.1		*	P
7440-09-7	Potassium	1330	B		P
7782-49-2	Selenium	0.94	B		P
7440-22-4	Silver	0.48	B		P
7440-23-5	Sodium	2560			P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	19.3			P
7440-66-6	Zinc	3970		E	P
	Cyanide	0.06	U	N	CA

olor Before: BROWN Clarity Before: Texture: MEDIUM

olor After: YELLOW Clarity After: Artifacts:

omments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00R1

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Lab Sample ID: 43507S

Level (low/med): LOW Date Received: 03/20/02

% Solids: 79.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8050			P
7440-36-0	Antimony	8.8	B	N	P
7440-38-2	Arsenic	11.5		*	P
7440-39-3	Barium	317		*	P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	32000		*	P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	225		N	P
7440-50-8	Copper	321			P
7439-89-6	Iron	63100			P
7439-92-1	Lead	6680			P
7439-95-4	Magnesium	8350			P
7439-96-5	Manganese	780			P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	163		*	P
7440-09-7	Potassium	2480			P
7782-49-2	Selenium	1.3			P
7440-22-4	Silver	0.28	U		P
7440-23-5	Sodium	5850			P
7440-28-0	Thallium	2.6			P
7440-62-2	Vanadium	17.4			P
7440-66-6	Zinc	10000		E	P
	Cyanide	0.05	U	N	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00R2

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Lab Sample ID: 43508S

Level (low/med): LOW Date Received: 03/20/02

% Solids: 75.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6050			P
7440-36-0	Antimony	1.3	B	N	P
7440-38-2	Arsenic	9.9		*	P
7440-39-3	Barium	110		*	P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	17.4			P
7440-70-2	Calcium	55900		*	P
7440-47-3	Chromium	10.7			P
7440-48-4	Cobalt	33.8		N	P
7440-50-8	Copper	58.6			P
7439-89-6	Iron	16800			P
7439-92-1	Lead	2730			P
7439-95-4	Magnesium	3720			P
7439-96-5	Manganese	1100			P
7439-97-6	Mercury	0.57			CV
7440-02-0	Nickel	32.5		*	P
7440-09-7	Potassium	720	B		P
7782-49-2	Selenium	0.66	U		P
7440-22-4	Silver	0.29	U		P
7440-23-5	Sodium	1160	B		P
7440-28-0	Thallium	1.1	U		P
7440-62-2	Vanadium	22.0			P
7440-66-6	Zinc	698		E	P
_____	Cyanide	0.05	U	N	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

ME00R3

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Lab Sample ID: 43509S

Level (low/med): LOW Date Received: 03/20/02

% Solids: 60.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6940			P
7440-36-0	Antimony	1.0	U	N	P
7440-38-2	Arsenic	11.6		*	P
7440-39-3	Barium	150		*	P
7440-41-7	Beryllium	0.92	B		P
7440-43-9	Cadmium	9.0			P
7440-70-2	Calcium	37000		*	P
7440-47-3	Chromium	17.3			P
7440-48-4	Cobalt	137		N	P
7440-50-8	Copper	80.8			P
7439-89-6	Iron	29500			P
7439-92-1	Lead	389			P
7439-95-4	Magnesium	14500			P
7439-96-5	Manganese	2030			P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	460		*	P
7440-09-7	Potassium	1210	B		P
7782-49-2	Selenium	2.4			P
7440-22-4	Silver	0.36	U		P
7440-23-5	Sodium	1620	B		P
7440-28-0	Thallium	1.4	U		P
7440-62-2	Vanadium	28.1			P
7440-66-6	Zinc	1460		E	P
	Cyanide	0.07	U	N	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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BLANKS

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	78.1	U	78.1	U	78.1	U	78.1	U	15.620	U	P
Antimony	3.1	U	3.1	U	3.1	U	3.1	U	0.721	B	P
Arsenic	2.6	B	2.6	U	2.6	U	2.6	U	0.602	B	P
Barium	0.6	B	0.8	B	0.4	U	0.4	U	0.080	U	P
Beryllium	0.2	B	0.2	U	0.2	U	0.2	U	0.040	U	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Calcium	226.6	U	226.6	U	226.6	U	226.6	U	45.320	U	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.417	B	P
Cobalt	1.3	U	1.3	U	1.3	U	1.3	U	0.435	B	P
Copper	1.2	U	1.2	U	1.2	U	-1.5	B	0.589	B	P
Iron	12.2	U	25.1	B	12.2	U	12.2	U	4.705	B	P
Lead	1.9	U	1.9	U	6.4		1.9	U	0.380	U	P
Magnesium	-23.6	B	45.3	B	-30.3	B	22.1	U	4.420	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV
Nickel	2.6	U	2.6	U	2.6	U	2.6	U	0.520	U	P
Potassium	39.1	U	39.1	U	39.1	U	39.1	U	7.820	U	P
Selenium	2.5	U	2.5	U	2.5	U	2.5	U	0.500	U	P
Silver	1.1	U	1.1	U	1.1	U	1.1	U	0.455	B	P
Sodium	400.2	U	400.2	U	400.2	U	400.2	U	80.040	U	P
Thallium	4.3	U	5.4	B	4.3	U	4.6	B	0.860	U	P
Vanadium	1.5	U	1.5	U	1.5	U	1.5	U	0.369	B	P
Zinc	3.2	U	3.2	U	3.2	U	3.2	U	0.640	U	P
Cyanide	0.8	U	-2.4	B	-2.6	B	2.1	B	-0.086	B	CA

BLANKS

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt	1.3	U	1.3	U	1.3	U					P
Copper											NR
Iron											NR
Lead	1.9	U	1.9	U	1.9	U					P
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ME00R1S

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 79.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	89.0496		8.8359	B	125.63	63.8	N	P
Arsenic	75-125	23.9532		11.4883		10.05	124.0		P
Barium	75-125	750.4752		316.9554		502.51	86.3		P
Beryllium	75-125	12.8523		0.7460	B	12.56	96.4		P
Cadmium	75-125	12.5790		1.1266	B	12.56	91.2		P
Calcium									NR
Chromium	75-125	68.9004		13.3921		50.25	110.5		P
Cobalt	75-125	452.2814		224.5793		125.63	181.2	N	P
Copper		394.3631		320.5945		62.81	117.4		P
Iron									NR
Lead		5105.1490		6680.6746		5.03	-31322.6		P
Magnesium									NR
Manganese		1400.2987		780.4027		125.63	493.4		P
Mercury	75-125	0.6137		0.0678	B	0.63	86.7		CV
Nickel	75-125	259.3946		162.7888		125.63	76.9		P
Potassium									NR
Selenium	75-125	3.8222		1.2965		2.51	100.6		P
Silver	75-125	11.5416		0.2764	U	12.56	91.9		P
Sodium									NR
Thallium	75-125	14.0865		2.6011		12.56	91.4		P
Vanadium	75-125	136.6832		17.4416		125.63	94.9		P
Zinc		13562.0466		10012.0574		125.63	2825.7		P
Cyanide	75-125	3.5284		0.0503	U	6.28	56.2	N	CA

Comments:

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U.S. EPA - CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ME00R1A

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		154.71		35.17	B	120.0	99.6		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt		2612.50		893.83		1787.7	96.1		P
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide		7.66	B	0.80	U	20.0	38.3		CA

Comments:

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DUPLICATES

EPA SAMPLE NO.

ME00R1D

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 79.6 % Solids for Duplicate: 77.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		8048.8247		7652.0878		5.1		P
Antimony		8.8359	B	6.9251	B	24.2		P
Arsenic	2.5	11.4883		14.9830		26.4	*	P
Barium	50.3	316.9554		216.7952		37.5	*	P
Beryllium		0.7460	B	0.6418	B	15.0		P
Cadmium	1.3	1.1266	B	1.7572		43.7		P
Calcium		32037.1201		24851.9924		25.3	*	P
Chromium		13.3921		13.1855		1.6		P
Cobalt		224.5793		249.0967		10.4		P
Copper		320.5945		391.7682		20.0		P
Iron		63093.9776		51719.7588		19.8		P
Lead		6680.6746		5632.5671		17.0		P
Magnesium		8354.3980		7016.9080		17.4		P
Manganese		780.4027		699.6131		10.9		P
Mercury		0.0678	B	0.0628	U	200.0		CV
Nickel		162.7888		230.1723		34.3	*	P
Potassium	1256.3	2483.7206		1870.2310		28.2		P
Selenium	1.3	1.2965		1.9256		39.0		P
Silver		0.2764	U	0.6294	B	200.0		P
Sodium	1256.3	5852.0387		5961.0519		1.8		P
Thallium	2.5	2.6011		1.7958	B	36.6		P
Vanadium	12.6	17.4416		19.4743		11.0		P
Zinc		10012.0574		10858.8735		8.1		P
Cyanide		0.0503	U	0.0503	U			CA

EPA SAMPLE NO.

ICP SERIAL DILUTIONS

ME00R1L

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	32034.32		34563.11		7.9		P
Antimony	35.17	B	41.17	B	17.1		P
Arsenic	45.72		68.12		49.0		P
Barium	1261.48		1320.78		4.7		P
Beryllium	2.97	B	3.58	B	20.5		P
Cadmium	4.48	B	4.29	B	4.2		P
Calcium	127507.74		139563.18		9.5		P
Chromium	53.30		57.78		8.4		P
Cobalt	893.83		965.01		8.0		P
Copper	1275.97		1329.93		4.2		P
Iron	251114.03		270536.26		7.7		P
Lead	26589.08		28967.06		8.9		P
Magnesium	33250.50		35552.03		6.9		P
Manganese	3106.00		3324.65		7.0		P
Mercury							NR
Nickel	647.90		700.34		8.1		P
Potassium	9885.21		10611.00	B	7.3		P
Selenium	5.16		12.50	U	100.0		P
Silver	1.10	U	5.50	U			P
Sodium	23291.11		25399.15		9.1		P
Thallium	10.35		40.93	B	295.5		P
Vanadium	69.42		72.90	B	5.0		P
Zinc	39847.99		46643.74		17.1	E	P

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

ICP ID Number: P3 Date: 01/15/02

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	78.1	P
Antimony	206.80		60	3.1	P
Arsenic	189.00		10	2.6	P
Barium	493.40		200	0.4	P
Beryllium	313.00		5	0.2	P
Cadmium	226.50		5	0.4	P
Calcium	317.90		5000	226.6	P
Chromium	267.70		10	1.0	P
Cobalt	228.60		50	1.3	P
Copper	324.70		25	1.2	P
Iron	271.40		100	12.2	P
Lead	220.30		3	1.9	P
Magnesium	279.00		5000	22.1	P
Manganese	257.60		15	0.4	P
Mercury			0.2		NR
Nickel	231.60		40	2.6	P
Potassium	766.40		5000	39.1	P
Selenium	196.00		5	2.5	P
Silver	328.00		10	1.1	P
Sodium	330.20		5000	400.2	P
Thallium	190.80		10	4.3	P
Vanadium	292.40		50	1.5	P
Zinc	206.20		20	3.2	P
Cyanide			10		NR

Comments:

P3: THERMO JARRELL ASH

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

I Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

ICP ID Number: Date: 01/15/02

Flame AA ID Number: C5

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70		0.2	0.1	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

C5: CETAC M6000

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

ICP ID Number: Date: 01/15/02

Flame AA ID Number: C1

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	580.00		10	0.8	CA

Comments:

C1: LACHAT

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PREPARATION LOG

Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	03/21/02	1.00	200
ME00Q8	03/21/02	1.00	200
ME00Q9	03/21/02	1.00	200
ME00R0	03/21/02	1.00	200
ME00R1	03/21/02	1.00	200
ME00R1D	03/21/02	1.00	200
ME00R1S	03/21/02	1.00	200
ME00R2	03/21/02	1.00	200
ME00R3	03/21/02	1.00	200
PBS	03/21/02	1.00	200

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PREPARATION LOG

Lab Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	03/21/02	0.20	100
ME00Q8	03/21/02	0.20	100
ME00Q9	03/21/02	0.20	100
ME00R0	03/21/02	0.20	100
ME00R1	03/21/02	0.20	100
ME00R1D	03/21/02	0.20	100
ME00R1S	03/21/02	0.20	100
ME00R2	03/21/02	0.20	100
ME00R3	03/21/02	0.20	100
PBS	03/21/02	0.20	100

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PREPARATION LOG

Name: Sentinel, Inc. Contract: 68-W-00-085

Lab Code: SENTIN Case No.: 30310 SAS No.: SDG No.: ME00Q8

Method: CA

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	03/21/02	1.00	50
ME00Q8	03/21/02	1.00	50
ME00Q9	03/21/02	1.00	50
ME00R0	03/21/02	1.00	50
ME00R1	03/21/02	1.00	50
ME00R1D	03/21/02	1.00	50
ME00R1S	03/21/02	1.00	50
ME00R2	03/21/02	1.00	50
ME00R3	03/21/02	1.00	50
PBS	03/21/02	1.00	50
S100	03/21/02		50

Appendix C
Illinois EPA Sample Photographs

No Photos Available At This Time